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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
Luther H. Hodges, *Secretary*

OFFICE OF TECHNICAL SERVICES
Donald A. Schon, *Director*

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UNITED STATES DEPARTMENT OF COMMERCE
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TECHNICAL TRANSLATIONS

Volume 10, Number 12 Pages 1485 - 1634 December 30, 1963

*Descriptors marked with an asterisk are listed in the subject index.

AGRICULTURE

SESSION OF THE ALL-UNION LENIN ACADEMY OF AGRICULTURAL SCIENCES, 5-7 Mar [63]
Vsesoyuznaya Ordena Lenina Akademiya Sel'skokhozyaistvennykh Nauk imeni V. I. Lenina).
11 Oct 63, 42p Trans. A-1406.
Order from OTS or SLA $4.60 63-24063

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1963 [v. 8] no. 5, p. 3-25.

DESCRIPTORS: *Conferences, *Agriculture, Animals, Plants (Botany), Veterinary medicine.

Summaries are given of the papers presented.

USSR INDUSTRIAL DEVELOPMENT: SOVIET TRACTORS AND AGRICULTURAL MACHINERY NO. 93.
21 Oct 63, 20p JPRS: 21529.
Order from OTS $0.75 63-31977

Consists of 39 brief articles from 1963 issues of Russian newspapers and journals.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Supplies.

Eckstein, Zygmunt.
ON THE POSSIBLE USE OF NITROPARAFFINS FOR THE SYNTHESIS OF CHEMICAL PLANT-PROTECTING AGENTS (O Mozliwosciach Praktycznego Wykorzystania Nitroparafin do Syntezy Chemicznych Srodkow Ochrony Roslin). [1963] [20p] (foreign text included) 52refs
Order from SLA $1.60 63-20242

Trans. of Przemysl Chemiczny (Poland) 1958, v. [14]37, p. 630-634.

DESCRIPTORS: *Herbicides, *Fungicides, *Alcohols, *Nitro radicals, Synthesis (Chemistry), Molecular structure.

On the basis of the literature and experiments the ps possibility of utilizing nitroparaffins in the synthesis of plant and crop protection agents is discussed. A description is given of the study, carried out by the author and coworkers, on the application of nitro-alcohols to the esterification of biologically active phenoxyacetic acids to obtain esters used as weed-killers. It was found that nitrodiols are active as fungicides, and their activity depends distinctly on the chemical structure. It was also established that some derivatives of methazonic acid show acaricide activity and form a new class of acaricides. (Author)

Evreinov, M. G.
NEW TYPES OF POWER USED IN AGRICULTURAL PRODUCTION (Novye Vidy Energii v Sel'skokhozyaistvennom Proizvodstve). 1963, 4p. 1 ref. PL-480 Agr.
Order from OTS $0.50 63-11053

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1960 [v. 5] no. 7, p. 81-84.

DESCRIPTORS: Agriculture, *Agricultural machinery, Plants (Botany), *Ultraviolet radiation, Seeds, *Ultrasonic radiation.

Gabrieli, M.
PRICE AND QUESTIONS OF EFFECTIVENESS OF NEW AGRICULTURAL MACHINERY. USSR Industrial Development: Soviet Tractors and Agricultural Machinery. 24 Oct 63, 15p JPRS: 21581.
Order from OTS $0.50 63-31994

Trans. of #Voprosy Ekonomiki (USSR) 1963, no. 7, p. 59-69.

DESCRIPTORS: *Tractors, *Agricultural machinery, Economics.

Gel'fenbein, S. and Pasechnikov, N.
INTERNATIONAL EXHIBITION OF APPARATUS (Mezhdunarodnaya Vistovka Priborov) tr. by B. Ribush. [1953] [10p] (foreign text included) [CSIRO] Trans. no. 6277.
Order from OTS or SLA $1.10 63-23750

Trans. of [Tekhnika v Sel'skom Khozyaistve] (USSR) 1961, v. 21, no. 1, p. 85-87.

DESCRIPTORS: *Agricultural machinery, *Test equipment, Conferences.

Korbut, L.
IMPORTANT PROBLEMS OF THE MECHANIZATION OF AGRICULTURE. USSR Industrial Development: Soviet Tractors and Agricultural Machinery. 18 Oct 63, 9p JPRS: 21499.
Order from OTS $0.50 63-31962

Trans. of #Voprosy Ekonomiki (USSR) 1963, no. 8, p. 89-95.

DESCRIPTORS: *Tractors, *Agricultural machinery, Economics.

Korolev, V. F.
MILKING MACHINE WITH CONTROLLED PRESSURE IN THE INTERPARIETAL SPACE OF TEAT CUPS, tr. by L. H. 5 Sep 63, 5p (figs. omitted) 1ref
Order from OTS or SLA $1.10 63-24124

Trans. of USSR author's certificate 117,465, cl 45g, 4/01, appl. 31 Jan 58, approved for printing 13 Feb 59.

DESCRIPTORS: Agricultural machinery, *Milking machines, Design.

The invention relates to a milking machine with controlled pressure in the interparietal space of the teat cups, characterized in that -- to accelerate the process of milking by drawing off milk by suction from the teats of the cow without irruption -- the degree of compressive squeezing of the teat rubber is such that it does not impede the outflow of milk and precludes any harmful effect of the continuous vacuum on the teats; this is realized by the interaction of the collector valve and the screw valve (cock) located on the central tube for the purpose of admission of atmospheric air into the interparietal space of the teat cups. (Author)

Animal Husbandry

POLYFOS IN THE FEEDING OF POULTRY.
30 May 61, 8p.
Order from SLA $1.10 63-16217

Trans. of mono. rept. by the Research Institute of A. E. C., Commentry.

DESCRIPTORS: *Chickens, *Diet, Feeding

Three experimental diets (French, Canadian, and U. S.) were given to 4 groups of 30 chickens to determine the effect of the mineral phosphate supplements Polyfos and dicalcium phosphate. The French diet with mineral phosphate had a more favorable effect on growth than did the diet without phosphate. The Canadian diet with phosphates more than doubled the weight of the chickens. Identical results were obtained with the U. S. diet. Of the two supplements, dicalcium phosphate was slightly more effective than Polyfos. The composition of each diet and experimental data are given.

Alpatov, I. L.
POISONING OF CATTLE AFTER STINGS BY BLACK FLIES, tr. by J. M. Halek. 19 July 63 [1]p.
NIH no. 7-35-63.
Order from OTS or SLA $1.10 63-23414

Trans. of Veterinariya (USSR) 1962, v. 39, no. 6, p. 57.

DESCRIPTORS: *Cattle, *Bites and stings, *Diptera, Poisoning, Hemorrhage.

Beginning with May 31, a flight of a large number of black flies swarmed around for two days. After the black flies had attacked the animals for 12-20 hours, 70 head became ill, of which 12 cows and 10 calves in the age group of 6-9 months died. Symptoms of the illness: sick animals were listless, lay down and had difficulty in seeing, and cold edemas were noted in the region of the eyes, submaxillary area, udder and perineum. On hairless parts of the skin, stings produced a number of minute hemorrhages. The illness lasted 12-36 hours, after which death occurred. Treatment: The animals were placed in dark quarters, caffein was administered subcutaneously, milk internally. Camphorated oil was applied to the sites of swelling. (Report quoted in its entirety)

Cheremisin, G. G.
DOGS: THE SOURCE OF SPREADING OF OVINE BRUCELLOSIS (Sobaki: Istochnik Rasprostraneniya Brutselleza Ovets). 24 Sep 63, 3p Trans. V-1855.
Order from OTS or SLA $1.10 63-24008

Trans. of Veterinariya (USSR) 1963, v. 40, no. 2, p. 27-28.

DESCRIPTORS: *Dogs, Zoonosis, Epidemeology, *Brucellosis, Sheep, Veterinary medicine.

Dobrokhotov, A. M.
COMMITTEE ON VETERINARY AFFAIRS OF THE COUNCIL OF LABOR AND DEFENSE AND ITS ROLE IN THE CONTROL OF EPIZOOTICS IN THE USSR (Komitet po Veterinarnym Delam pri Sovete Truda i Oborony i Ego Rol' v Likvidatsii Epizootii v SSSR). 26 Sep, 10p Trans. V-1858.
Order from OTS or SLA $1.10 63-24011

Trans. of Veterinariya (USSR) 1962, v. 39, no. 12, p. 69-74.

DESCRIPTORS: *Veterinary medicine, *Zoonosis, Animals, Man, Diseases.

Fesenko, V. P.
MASS CASES OF STACHYBOTRYS ALTERNANS TOXICOSIS IN HORSES: LETTER TO THE EDITOR. 30 Sep 63, 2p Trans. V-1860.
Order from OTS or SLA $1.10 63-24111

Trans. of Veterinariy (USSR) 1963, v. 40, no. 3, p. 57.

DESCRIPTORS: Veterinary medicine, *Horses, Food, *Fungus infections, Contamination, *Barley, Toxicity.

Ginzburg, A. G.
TO STRENGTHEN THE VETERINARY SERVICE AND STATE VETERINARY CONTROL (Vsemerno Ukreplyat' Veterinarnuyu Sluzhbu i Gosudarstvennyi Veterinarnyi Kontrol'). 3 Oct 63, 7p Trans. V-1861.
Order from OTS or SLA $1.10 63-24113

Trans. of Veterinariya (USSR) 1963, v. 40, no. 6, p. 6-10.

DESCRIPTORS: *Veterinary medicine, *Conferences, Cattle.

An account is given of the All-Union Conference of Leaders of Veterinary Agencies of the Allied Republics, Directors of Republic Laboratories, Managers of the "Zoovetsnab" [Zoological Veterinary Supply], Heads of Transport Veterinary Services and prominent veterinary scientists, called by the Ministry of Agriculture of USSR, which took place in Moscow. Actual problems on the organization of the veterinary work (improvement of servicing of the animal husbandry, maximum retention of cattle livestock, and others) were in the center of attention of the participants of the Conference. (Author)

Isaichev, G. and Trefilov, A.
REUNION OF FORMER GRADUATES (Vstrecha Byvshykh Vypusknikov). 30 Sep 63, 2p (illus omitted) Trans. V-1859.
Order from OTS or SLA $1.10 63-24112

Trans. of Veterinariya (USSR) 1963, v. 40, no. 5, p. 91-92.

DESCRIPTORS: *Conferences, Veterinary medicine.

An account of a reunion of veterinary surgeons, who graduated from the Military-Veterinary Academy in May, 1948, which took place at the Moscow Veterinary Academy.

Kulesko, I. I., Shikov, A. T., and Yarnykh, V. S.
AEROSOL IMMUNIZATION OF PIGLETS AGAINST HOG CHOLERA (Aerozol'naya Immunizatsiya Porosyat Protiv Chumy). 22 July 63, 8p. 1 ref. Trans. V-1836.
Order from OTS or SLA $1.10 63-23335

Trans. of Veterinariya (USSR) 1963, v. 40, no. 5, p. 30-32.

DESCRIPTORS: *Inhalation immunization, *Swine, Aerosols, *Hog cholera vaccine, Veterinary medicine, Drugs, Bacterial products.

In piglets, four months of age, which were not immunized previously with anything, vaccine virus "ASV," atomized with a pneumatic eddy noxxle, produced the same general reaction of the organism which was observed after its intramuscular administration. In piglets that are highly sensitive to the vaccine virus, the aerosol immunization is as effective as the intramuscular. (Author)

Plant Cultivation

Akaike, Shigeo.
STUDIES OF THE PHYSICAL AND CHEMICAL ELEMENTS AFFECTING THE QUALITY OF LEAF TOBACCO. [1963] 24p
Order from K-H $24.00 K-H 13042

Trans. from [Tabako Shikenjo, Hatano. Tokubetsu Hokoku] (Japan) 1952, no. 36.

DESCRIPTORS: *Tobacco, Plants (Botany), Acceptability.

Akramov, I. K.
CONTRIBUTION TO THE STUDY OF THE DIFFERENT VARIETIES OF GRAPES CULTIVATED IN THE VALE OF FERGHANA (K Izucheniyu Sortimenta Vinograda Ferganskoi Doliny) tr. by V. A. Soloduhin. [1963] [8p] (foreign text included) [CSIRO] Trans. no. no. 6349.
Order from OTS or SLA $1.10 63-24071

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 4, p. 36-38.

DESCRIPTORS: *Vitaceae, Morphology, Plants (Botany).

A short description is given of each of the following varieties: Azimboi, Zogakpeshpazak, Mansuri, Rishtan Kizil-uzum, Ak-koppak, Pakiri, Kara Khurmoi, Botyr-uzum (Ayimsuyar), Gulomon, Kayroki, Chumai, and Tutak.

Barbier, G. and Chabannes, J.
CONTRIBUTION TO THE STUDY OF BORON IN THE SOIL AND IN PLANTS. [1953] 15p
Order from ATS $19.25 ATS-19Q72F

Trans. of Ann[ales] Agron[omiques] (France) 1953, v. 4, no. 1, p. 27-43.

DESCRIPTORS: *Plants (Botany), *Soils, *Boron.

Curcio, Massimo.
LIGHT ORIENTAL (LEVANTINE) TOBACCOS AND POTASSIUM FERTILIZATION. [1963] 7p
Order from K-H $7.00 K-H 2150 b

Trans. of il Tabacco (Italy) 1950, v. 54, Mar, p. 96-98.

DESCRIPTORS: *Tobacco, *Fertilizers, Potassium compounds.

Ivanyutin, I. M.
A NEW METHOD IN GRAPEVINE NURSERIES (Primenyaem Novoe v Pitomnikovodstve) tr. by B. Ribush. [1963] [4]p. (foreign text included). [CSIRO] Trans. no. 6329.
Order from OTS or SLA $1.10 63-23747

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 6, p. 50-51.

DESCRIPTORS: *Vitaceae, Growth, Plants (Botany),

Coating the grafts of grapevines with paraffin at 65 to 70° C prior to planting resulted in an increased yield and decreased the labor involved.

Kozenko, E. M.
DYNAMICS OF TITRATABLE ACIDITY DURING MATURATION OF GRAPES (Dinamika Titruemoi Kislotnosti v Protsesse Sozrevaniya Vinograda) tr. by V. A. Soloduhin. [1963] [8p] (foreign text included) 8refs [CSIRO] Trans. no. 6313.
Order from OTS or SLA $1.10 63-23993

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 7, p. 7-10.

DESCRIPTORS: *Vitaceae, *Growth, *Hydrogen ion concentration, Titration, Fruit juices, *Mathematical analysis, Ecology.

A formula was devised for the calculation of the titratable acidity of grape juice during maturation of grapes. The calculations support experimental data which show that the acidity increases as the grape grows, reaches a maximum, and then decreases during maturation.

Kurth, H.
SUPPORTING MATERIAL FOR SOILLESS PLANT CULTURE. Sep 63.
Order from TTIS $4.50 TTIS NS 135

Trans. of East German patent 24,726, appl. 28 Apr 60, pub. 18 Feb 63.

DESCRIPTORS: *Plants (Botany), Growth.

Litvinov, P. I.
THE MAIN PROBLEMS OF SCIENTIFIC RESEARCH (Osnovnye Zadachi Nauchno-Issledovatel'skoi Raboty) tr. by V. A. Soloduhin. [1963] [8p] (foreign text included) [CSIRO] Trans. no. 6350.
Order from OTS or SLA $1.10 63-24072

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 4, p. 1-3.

DESCRIPTORS: *Vitaceae, *Wines, Plants (Botany), Growth, Labor, Scientific research.

The Institute of Scientific Research for Viticulture and Wine-making aims at solving the following main Viticultural problems: increasing commercial efficiency in viticulture; increasing grape Yields; introducing better grape varieties in the various vine-growing districts of the Russian Soviet Federal Socialist Republic; mechanizing the various viticultural operations; and improving the quality of viticultural products.

Lutkova, I. N., Oleshko, P. M., and Bysenko, D. M.
EFFECT OF HIGH-VOLTAGE ON ROOTING OF GRAPE CUTTINGS (Vliyanie Tokov Vysokogo Napryazheniya na Ukorenenie Cherenkov Vinograda) tr. by V. A. Soloduhin. [1963] [3p] (foreign text included) [CSIRO] Trans. no. 6310.
Order from OTS or SLA $1.10 63-23989

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 3, p. 52.

DESCRIPTORS: *Vitaceae, Growth, *Electric potential, *Alternating current, Plants (Botany).

Cuttings of the Chasselas variety of grapes were subjected to voltages of 500, 800, and 1100 for 10, 20, and 30 minutes a day. The 1100-volt exposure caused an earlier "awakening" of the buds than in the control plants; the 800- and 500-volt exposure had a similar effect when applied for 30 minutes every day. In the remaining variants no visible effect was recorded. With 1100 volts all the cuttings took root or formed a callus. In almost all the variants used, the number of cuttings which took root was greater than in the control plant. Cuttings subjected to 1100 volts had the most developed root systems.

Maistrenko, A. M.
110.6 CENTNERS OF GRAPES FOR HECTARE (S Kazhdogo Gektara 110,6 Ts. Vinograda) tr. by V. A. Soloduhin. [1963] [11p] (foreign text included) [CSIRO] Trans. no. 6348.
Order from OTS or SLA $1.60 63-24070

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 4, p. 8-12.

DESCRIPTORS: *Vitaceae, Plants (Botany), Growth, Fertilizers.

Minasyan, A. I. and Melkonyan, A. S.
VINE ROOT SYSTEMS IN VARIOUSLY FERTILIZED STONY SOILS IN THE ARMENIAN SOVIET SOCIALIST REPUBLIC (Kornevaya Sistema Vinograda na Razlichno Udobrennykh Kamenistykh Pochvakh Armyanskoi SSR) tr. by V. A. Soloduhin. [1963] [13p] (foreign text included). [CSIRO] Trans. no. 6307.
Order from OTS or SLA $1.60 63-23748

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962, [v. 22] no. 2, p. 36-42.

DESCRIPTORS: *Vitaceae, *Plants (Botany), *Soils, *Fertilizers, Distribution,

Various types of fertilizers were added to stony soils in order to determine which fertilizer is most useful in viticulture. Organic and mineral-organic fertilizers, and clover had a favorable effect. An examination was made of the root systems of grapevines grown in soils fertilized by (1) minerals, (2) soil plus natural manure, and (3) lucerne. The vines developed best in soils fertilized with a soil-manure compost; the sowing of lucerne between the vine rows had an unfavorable effect on the over-all size of the vine.

Rubin, B. A. and Ivanova, T. M.
THE ROLE OF AMINO ACID OXIDASES IN THE IMMUNITY OF CABBAGE TO BOTRYTIS CINEREA. [1963] [20]p 31 refs.
Order from OTS or SLA $1.60 63-19457

Trans. of Biokhimiya Plodov i Oveshchei (USSR) [1959] v. 5, p. 113-132.

DESCRIPTORS: *Oxidases, *Amino acids, *Molds (Organisms), Immunity, Vegetables, Anthoxanthin pigments.

Eleven free amino acids and the amide asparagine were found in the tissues of the tested varieties of cabbage. The Amager variety that is infection-resistant contains 4 to 5 times as much of the amino acids as the non-resistant variety. The infection-resistant Amager variety exhibits considerable activity of the amino acid oxidases. These oxidases are most active in the oxidation of aspartic and glutamic acids, threonine, proline, and glycine. The activity of the amino acid oxidases increases in cabbage tissue in response to B. cinerea infection. The most pronounced changes are found in the resistant Amager variety of cabbage at the border of the infected tissue. The oxidases is directly related to the intensity of residual respiration in the infection of cabbage by B. cinerea. The amino acid oxidases play an important role in the defense reactions of cabbage against the B. cinerea fungus and the products of its activity.

Thun, R.
EFFECT OF LIME, MAGNESIA LIME, AND MAGNESIUM SULPHATE FERTILIZATION ON THE UPTAKE AND EFFICIENCY OF VARIOUS PHOSPHATE FERTILIZERS. [1963] 32p (figs. omitted) 2refs
Order from SLA $3.60 63-18117

Trans. of [Zeitschrift für Pflanzenernährung, Düngung, Bodenkunde] (Germany) [1942] v. 30, p. 137-156.

DESCRIPTORS: *Fertilizers, *Phosphates, *Magnesium compounds, *Sulfates, *Calcium compounds, Oxides, Soils, Statistical data, Plants (Botany).

ASTRONOMY

Podobed, V. V.
FUNDAMENTAL ASTROMETRY. 1963, 350p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Fundamental'naya Astrometriya, Moscow, 1962, 340p].

DESCRIPTORS: Astronomy, *Stars, *Mapping,

Sytinskaya, N. N.
RECENT INVESTIGATIONS OF THE ATMOSPHERE AND SURFACE OF MARS. 5 Aug 63 [17p] RSIC-44.
Order from OTS or SLA $1.60 63-23695

Trans. of Priroda (USSR) 1956, v. 45, no. 6, p. 33-41.

DESCRIPTORS: *Mars, *Extraterrestrial topography, Planets, *Planetary atmospheres, Physical properties, Chemical properties, Optical properties, Astronomy, Analysis.

A survey is made of information concerning the topographical features, atmosphere, cloud and fog, chemical composition of atmosphere, temperature of surface, and polar caps of the planet Mars.

Astrophysics

SOVIET-BLOC RESEARCH IN GEOPHYSICS, ASTRONOMY, AND SPACE NO. 69. 16 Oct 63, 24p JPRS: 21488.
Order from OTS $16.00/year 61-11147-69
foreign $20.00/year

DESCRIPTORS: *Geophysics, *Astronomy, *Astronautics, *Upper atmosphere, *Space probes, *Astrophysics, *Meteorology, *Oceanology.

Consists of news items and abstracts of scientific articles on astronomy, meteorology, oceanography, terrestrial geophysics, upper atmosphere and space research, and other miscellaneous subjects.

Gershberg, R. E.
RADIO EMISSION FORM PLANETARY NEBULAE AND DETERMINATION OF DISTANCES TO THESE OBJECTS (Radioizluchenie Planetarnykh Tumannostei i Opredelenie Rasstoyanii do Etikh Ob"ektov) tr. by P. A. Kazakov. [1963] [17p] (foreign text included) 18refs [CSIRO Trans] 6547.
Order from OTS or SLA $1.60 63-24075

Trans. of [Akademiya Nauk SSSR]. Krymskaya Astrofizicheskaya Observatoriya. Izvestiya, 1962, v. 28, p. 159-165.

DESCRIPTORS: *Planetary atmospheres, *Nebulae, Ranges (Distance), *Extraterrestrial radio waves, *Radio astronomy, Measurement, Electron density.

A method is proposed for determining the distance to individual planetary nebulae from their radio emission and electron density. The method is applicable to nebulae transparent to radio waves. but is not sensitive to their optical thickness in the Lyman continuum. New distances were derived for six planetary nebulae. These distances are systematically smaller than those found by Shklovskii's method. These two sets of distances agree much better when Shklovskii's results are made more accurate through more precise photometric data. New masses of these nebulae were calculated using the new distances and proved to be within 10^{-4} to 2.10^{-2} $M_{\odot}$. (Author)

Ioshpa, B. A.
MEASUREMENT OF MAGNETIC FIELDS IN SOLAR PROMINENCES (Izmerenie Magnitnykh Polei v Solnechnykh Protuberantsakh) tr. by P. A. Kazakov. [1963] [11p] (foreign text included) 4refs [CSIRO Trans] 6548.
Order from OTS or SLA $1.60 63-24076

Trans. of #Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 1, p. 172-176.

DESCRIPTORS: *Magnetic fields, *Solar flares, Magnetometers, Calibration, Design, Operation, Measurement, Astrophysics.

Results are given for the measurements of magnetic fields in solar prominences, which were carried out with the Izmiran solar magnetograph in the summer of 1961. The block-diagram of the magnetograph and its mode of operation are described. Magnetic fields in solar prominences reach a few hundred gauss. (Author)

Kolchinskii, I. G.
ON THE AMPLITUDE OF VIBRATION OF STAR IMAGES IN TELESCOPES IN DEPENDENCE ON THE ZENITH DISTANCE. [1963] 27p 15 refs.
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R67. When supply is exhausted, order from OTS or SLA $2.60 63-20240

Trans. of Astronomicheskii Zhurnal (USSR) 1952, v. 29, no. 3, p. 350-362.

DESCRIPTORS: *Stars, *Optical images, *Telescopes, Optical properties, Atmospheric refraction, Light transmission, Vibration, Astrophysics.

An analysis is made of observations of the amplitudes of vibrations of star images at different zenith distances to determine where the sources of these vibrations are localized in the atmosphere. Various observation methods are discussed and the data resulting from these observations are presented in table form.

Stanyukovich, K. P. and Bronshten, V. A.
VELOCITY AND ENERGY OF THE TUNGUSK METEORITE (O Skorosti i Energii Tungusskogo Meteorita) tr. by André L. Brichant. Dec 62, 7p 13refs
NASA Technical Trans. F-89; N63-11609.
Order from OTS $0.50 63-11710

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 3, p. 583-586.

DESCRIPTORS: *Metorites, Velocity, Energy, Shock waves, Temperature, *Explosions, Comets, Siberia.

On the basis of physical phenomena observed following the fall of the Tungusk meteorite, estimates are made of its energy and velocity. Possible explanations of the explosion that occurred during the fall of the meteorite are included. (NASA Abstract)

Stepanov, V. V.
ON THE STABILITY IN THE SENSE OF JACOBI. [1963] [18p] 5refs
Order from OTS or SLA $1.60 63-20285

Trans. of Astronomicheskii Zhurnal (USSR) 1936, v. 13, no. 5, p. 435-454.

DESCRIPTORS: *Calculus of variations, *Celestial mechanics, Equations of motion, Differential equations, Mathematical analysis, Integrals, N-body problem, *Stability.

BEHAVIORAL SCIENCES

WHAT IS AN ASTRONAUT? 6 Sep 63, 11p JPRS: 20967.
Order from OTS $0.50 63-31700

Trans. of Dnevnik Letchika Kosmonavta (USSR) 1962, no. 2, p. 22-26.

DESCRIPTORS: *Astronauts, Space Flight.

Excerpts from the diary of an unidentified cosmonaut.

BIOLOGICAL SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 324 (BIOLOGY AND MEDICINE SERIES). 16 Oct 63, 11p JPRS: 21469.
Order from OTS $0.50 63-31946

Consist of abstracts of articles from selected scientific and technical journals of East Germany and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Veterinary medicine, Birds, Parasites, Pesticides, Milk, Radiobiology, Diseases, Surgery, Public health.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 326 (BIOLOGY AND MEDICINE SERIES). 18 Oct 63, 22p. JPRS: 21502.
Order from OTS $0.75 63-31964

Consists of abstracts of articles from selected scientific and technical journals of East Germany and Yugoslavia.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, *Veterinary medicine, Surgery, Diseases, Tumors, Otorhinolaryngology, Gynecology, Microorganisms, Meat packing industry,

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 329 (BIOLOGY AND MEDICINE SERIES). 22 Oct 63, 31p.
JPRS: 21548.
Order from OTS $1.00 63-31985

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and Hungary.

DESCRIPTORS: *Abstracts, Bibliographies, *Biology, *Medicine, Pharmacology, *Diseases, Hematology, Conferences, Metabolism, Smokes, *Surgery, Psychiatry, Hospitals, Blood transfusions, Food poisoning, Immunology, Skin, Cancer.

Gudoshnikov, F. F.
TREATMENT OF THE POPULATION ON THE DISPENSARY LEVEL. 10 Sep 63, 5p. JPRS: 21002
Order from OTS $0.50 63-31718

Trans. of Sovetskoe Zdravookhranenie (USSR) 1963 [v. 22] no. 6, p. 13-16.

DESCRIPTORS: *Public health, *Medicine, Therapy, Hospitals, Population, Classification, Medical examination.

A general discussion is given on the organization of dispensary services. Classifications are proposed for patients according to their need for medical care. (Previously, doctors classified illnesses according to loss of working capacity). The organization of day infirmaries is proposed.

Lebedeva, M. N., Anishchenko, E. Ya., and Gorbenko, Yu. A.
DISTRIBUTION OF HETEROTROPHIC BACTERIA IN SOME SEAS OF THE MEDITERRANEAN BASIN. 26 Aug 63, 36p. 43 refs. JPRS: 20793.
Order from OTS $1.00 63-31612

Trans. of [Akademiya Nauk SSSR]. Sevastopol'skaya Biologicheskaya Stantsiya. Trudy, 1961, v. 14, p. 3-32.

DESCRIPTORS: Marine biology, *Bacteria, *Mediterranean Sea, *Plankton, Plants (Botany), Ecology, Microorganisms.

Water samples from the Mediterranean Sea east of Sardina were cultured to establish the distribution of heterotrophic bacteria. Samples were obtained from the Sea of Crete, Sea of Levanto, the central Mediterranean Sea, the Ionian Sea, the Strait of Otrano, the Tunisian Straits, and the Tyrrhenian Sea. Charts and graphs show the vertical distribution for each area. Other charts show the distribution in relation to temperature, salinity, and ocean currents. The bacterial content and distribution of the regions studied are compared with the polar and subtropical regions of the Pacific Ocean, the Indian Ocean, and the Black Sea. The straits of Oranto and Tunisia were found to be the richest in heterotrophic bacteria, followed in decreasing order of abundance by the Sea of Levanta, Tyrrhenian Sea, the Central Mediterranean, the Ionian Sea, and the Sea of Crete. These Mediterranean regions surpass the Polar regions of the Pacific Ocean in abundance of heterotrophic bacteria. In some regions, the distribution approximates that found in the equatorial regions of the Pacific. The distribution in the Black Sea is greater than in the Mediterranean regions studied. The heterotropic bacterial distribution found in these studies is evidence that phytoplankton productivity in the Southern Mediterranean is equal to or higher than in the ocean.

Medvedev, Zh. and Kirpichnikov, V.
PROSPECTS OF SOVIET GENETICS (Perspektivy Sovetskoi Genetiki). 10 Jun 63, 41p Trans. A-1392.
Order from OTS or SLA $4.60 63-23826

Trans. of Neva (USSR) 1963, no. 6, p. 165-175.

DESCRIPTORS: *Genetics, *Biochemical genetics.

A review is given of developments in the field of genetics since it was outlawed in the USSR in 1948. It is suggested that, in the interest of the national economy, this science can no longer be ignored.

Ovcharov, V. K., Anan'ina, I. B., and Varlamova, V. V.
PROBLEMS RELATIVE TO THE ORGANIZATION AND STATISTICS OF THE ACTIVITY OF URBAN MEDICAL DISTRICTS. 10 Sep 63, 9p. JPRS: 20993.
Order from OTS $0.50 63-31714

Trans. of Sovetskoe Zdravookhranenie (USSR) 1963 [v. 22] no. 6, p. 7-12.

DESCRIPTORS: *Medicine, *Medical personnel, *Hospitals, *Public health, Population, Distribution, Children, Personnel management, Statistical analysis,

Distribution of Russian clinical facilities and medical personnel in the various districts in relation to population served from 1955 to 1961 are evaluated statistically

Pyrina, I. L.
THE DEPENDENCE OF PRIMARY PRODUCTION ON THE COMPOSITION OF PHYTOPLANKTON (Zavisimost' Pervichnoi Produktsii ot Sostava Fitoplanktona) tr. by M. Slessers. 1963 [9]p. 11 refs. NOO Trans-201.
Order from OTS or SLA $1.10 63-23802

Trans. of mono. Pervichnaya Produktsiya Morei i Vnutrennikh Vod, Minsk, 1961, p. 308-313.

DESCRIPTORS: Plants (Botany), Marine biology, *Plankton, Algae, Photosynthesis.

The dependence of primary production on the composition of phytoplankton is based on special observations carried out in the summer of 1958 in the Ivan'kovskoye, Rybinskoye and Kuybyshevskoye water basins, as well as in certain sectors of the Volga River. In addition to the primary production, the species' composition and the biomass of phytoplankton was determined, the energy of solar light striking the water surface, the temperature and transparency of water. The instruments and methods used are briefly described, illustrating graphically the variations of photosynthesis in various algal groups and the utilization of light energy by various phytoplankton species in the above-mentioned water basins. (Translator)

Simakova, T. L., Kolesnik, Z. A., Strigaleva, N. V and others.
BACTERIAL CHANGE OF PETROLEUM AND OF ITS COMPONENTS UNDER ANAEROBIC CONDITIONS. [1963] [5p] 3refs
Order from OTS or SLA $1.10 63-20251

Trans. of Akad[emiya] Nauk [SSSR]. Inst[itut] Mikrobiol[ogii]. Tr[udy] 1961, v. 9, p. 81-85.

DESCRIPTORS: *Petroleum, Anaerobiology, Microorganisms, *Pseudomonas, Biosynthesis, Hydrocarbons, Nitrogen, Sulfur, Metabolism, Biochemistry.

The effect of bacterial metabolism was investigated on the transformation of some components in paraffinic oils. Bacterial biocenoses were produced under anaerobic conditions on a mineral medium with petroleum. Stratum waters from several crude oil fields served for isolation of the biocenoses. Most of the bacteria belonged to the genus Pseudonomas and differed by formal composition. Study of the effect of the biogenical factor on the changes in hydrocarbons, resins and asphaltenes, separated from paraffinic crude oils revealed small variations, but a determined direction of these processes were observed. Change of petroleum components depended not only on their chemical structure, but also on quantitative and qualitative contents of the microflora. The degree of petroleum change depends on the mutual ratios of physiological groups of the bacteria in biocenoses, because the direction and activity of changes are caused by quantitative ratios of bacteria and of their medium. A correspondence between quantitative ratios of denitrifying and sulfate-reducing bacteria and the degree of change in petroleum component examined was observed.

Zhukov-Verezhnikov, N., Yakovlev, V., and Maiskii, I.
THE COURSE OF DEVELOPMENT OF COSMIC MICROBIOLOGY. 1 Oct 63, 10p
Order from GPRC $2.00

Trans. from [Meditsinskaya Gazeta] (USSR) 1959 [v. 22] no. 90.

DESCRIPTORS: Scientific research, *Space biology, *Exobiology, *Microorganisms, Biology.

Anatomy and Physiology

Arnol'di, I. A.
ACCLIMATIZATION OF MAN TO THE NORTH AND SOUTH. 17 Oct 63, 59p JPRS: 21481.
Order from OTS $1.75 63-31954

Trans. of Akklimatizatsiya Cheloveka na Severe i Yuge, Moscow, 1962, 71p.

DESCRIPTORS: *Acclimatization, *Adaptation (Physiology), Polar regions, Tropical regions, Man, Public health, Nutrition, Body temperature, Physical fitness.

Bomel, Auguste.
DEVICE FOR TEMPERATURE INDICATION, tr. by J. R.-P. 18 Sep 63, 3p (figs omitted)
Order from OTS or SLA $1.10 63-24115

Trans. of French patent 523,896, gr. 12, cl. 3, filed 11 Feb 20, granted 30 Apr 21, pub. 26 Aug 21.

DESCRIPTORS: *Body temperature, Medical equipment, Temperature, Measurement.

Il'inskii, D. A.
A NEW METHOD FOR DETERMINING VENOUS TONUS. 10 Sep 63, 7p. 6 refs. JPRS: 20992.
Order from OTS $0.50 63-31713

Trans. of #Fiziologicheskii Zhurnal SSSR, 1963, v. 49, no. 6, p. 774-777.

DESCRIPTORS: Diagnostic agents, *Blood circulation, *Veins, Blood pressure, Vibration, Medical equipment,

A method of determining the tonus of the walls of veins is described. Mechanical sensors, placed at intervals along a vein and connected to an optical manometer are used to measure the changes in veinous volume resulting from a vibration wave along a segment of a vein. The measurements are taken (1) when the limb is held at the level of the heart, (2) when the limb is raised before the veins were compressed, and (3) two minutes after blood flow was disrupted by a cuff exerting a pressure of 60 mm Hg. In the first measurement, the rate at which the vibration wave propagates along the vein is an index of the mean physiological tonus of the subject. The second measurement

is an index of the natural tonus of the veins. The third measurement is an index of the maximum venous tonus. The differences among these indices makes it possible to determine the mobility of the venous walls.

Khazanovich, M. V.
PARTICIPATION IN PHYSICAL CULTURE AND SPORTS BY MIDDLE-AGED AND OLDER WORKERS. 21 Oct 63, 4p JPRS: 21532.
Order from OTS $0.50 63-31979

Trans. of Teoriya i Praktika Fizicheskoi Kul'tury (USSR) 1963 [v. 26] no. 5, p. 78-79.

DESCRIPTORS: *Exercise, *Physical fitness, *Age, Industrial medicine.

A summary of a conference on problems of the organization of physical education exercises and sports with middle-aged and older workers and employees, convened by the Institute of Gerontology and Experimental Pathology of the Academy of Medical Sciences USSR and the Central Council of the Volunteer Sport Society "Avangard", which took place in Kiev.

Klishov, A. A.
DEVELOPMENT OF AFFERENT AND EFFECTOR INNERVATION OF SOMATIC MUSCULATURE. 11 Oct 63, 19p 86refs JPRS: 21415.
Order from OTS $0.50 63-31921

Trans. of Arkhiv Anatomii, Gistologii i Embriologii (USSF) 1963, v. 44, no. 2, p. 93-102.

DESCRIPTORS: *Nerves, *Muscles, Embryos, Growth.

A survey concerning the nature of the first movements of animal and human embryos; the development of motor nerve endings (motor plates); the development of sensory nerve endings (neuro-muscular spindles and Vater-Pacini corpuscles); and, the appearance of heterochronic in the development of afferent and effector innervation of skeletal musculature. (Author)

Kukes, V. G. and Vlasova, M. N.
BLOOD SERUM CHOLESTEROL CONTENT AND THE DAILY DIET OF THE INDIGENOUS POPULATION IN THE FAR NORTH. [1963] [10p] 13refs FASEB Manuscript no. S 65-3.
Order from OTS or SLA $1.10 63-23846

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 6, p. 33-36.

DESCRIPTORS: *Cholesterol, *Blood serum, *Diet, Population, *Arctic regions.

A study was made of the cholesterol content of the blood serum and food of 1021 comparatively healthy adult inhabitants of the Far North living along the coasts of the Okhotsk, Bering, and Chukotsk Seas. These included Chukchis, Eskimos, Orochons, Koryaks, and Kamchadals. It was found that the blood serum of these peoples is the same as in the inhabitants of the central belt of the Soviet Union. It does not vary with the cholesterol content of the food. (Extracted)

Luk'yanenko, V. I. and Mikheeva, G. A.
THE PROPERDIN CONTENT OF FISH. 30 Aug 63, 5p. 6 refs. JPRS: 20875.
Order from OTS $0.50 63-31659

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 2, p. 469-472.

DESCRIPTORS: *Properdin, *Fishes, *Immunity, Antigen-antibody reactions, Evolution.

To evaluate the significance of properdin in both congenital and acquired immunity and to obtain data as to its evolutionary origins and development, the properdin content of the serum of 119 fishes of 8 different families was titrated. The biological activity of the properdin was determined by the complete inactivation of complement in serum without properdin by the properdin-zymosan complex with the properdin of the test serum. Properdin was present in 47 of the species or 39.5%. Statistical analysis showed no significant interspecies or interfamilial differences in properdin content in the species studied. Fish with properdin occur with the same frequency in all the species studied. The properdin content in the sera of fish was found to be much less than in warm-blooded animals. The low properdin titer and the high percentage of refractory sera may reflect the initial stages in the establishment of the properdin function of the organism in vertebrates where there is no parallelism between the degree of natural resistance of the organism and the properdin content of the serum.

Pevzner, L. Z.
NUCLEIC ACID CONTENT IN NERVE CELLS IN VARIOUS FUNCTIONAL STATES (ACCORDING TO DATA FROM QUANTITATIVE CYTOCHEMICAL INVESTIGATIONS). 30 Aug 63, 31p. 180 refs. JPRS: 20868.
Order from OTS $1.00 63-31654

Trans. of Ukrayins'kyi Biokhimichnyi Zhurnal (USSR) 1963, v. 35, no. 3, p. 448-477.

DESCRIPTORS: *Cytochemistry, *Spectrophotometers, *Nucleic acids, *Nerve cells,

This literature survey of the use of cytospectrophotometry in quantitative cytochemistry describes the procedures for its use and summarizes the results of its application in the study of the nucleic acids of nerve cells.

Tsukrova, F. M.
ELECTROPHORETIC STUDIES OF PROTEINS FROM THE BLOOD SERUM OF DONORS IN DIFFERENT AGE GROUPS. [1963] [8p] FASEB Manuscript no. S 373-2.
Order from OTS or SLA $1.10 63-23850

Trans. of Laboratornoe Delo (USSR) 1962, v. 8, no. 9, p. 40-42.

DESCRIPTORS: *Electrophoresis, Proteins, Blood serum, *Blood transfusions, *Aging (Physiology), *Blood proteins.

Yunosov, A. Yu.
NEURAL REGULATION OF THE COMPOSITION AND PROPERTIES OF BLOOD: CONCLUSION AND DEDUCTIONS AND TABLE OF CONTENTS. 10 Oct 63, 9p JPRS: 21405.
Order from OTS $0.50 63-31914

Trans. of mono. Fiziologiya Krovi Cheloveka i Zhivotnykh v Zharkom Klimate (Physiology of Human and Animal Blood in Hot Climates) Tashkent, 1961, chap. 7, p. 182-188, 207-208.

DESCRIPTORS: Nervous system, *Hematology, *Acclimatization, *Tropical regions.

Zimmermann, W.
THE COLOR REACTION OF SEX HORMONES AND ITS APPLICATION FOR QUANTITATIVE COLORIMETRIC DETERMINATIONS. [23 Mar 42] 7p 15refs.
Order from SLA $1.10 63-20292

Trans. of Hoppe-Seyler's Zeitschrift für Physiologische Chemie (Germany) 1935, v. 233 [no. 5/6] p. 257-264. A partial trans. is available from SLA mi$1.80, ph$1.80 as 59-20737, 23 Mar 42, 7p.

DESCRIPTORS: *Hormones, Sex glands, *Colorimetry.

Zotterman, Y., ed.
OLFACTION AND TASTE. Wenner-Gren Center International Symposium Series, v. 2, 1963, 400p.
Order from PP $14.00

Trans. of mono. International Symposium on Olfaction and Taste (no. 1) Stockholm, n.d. Proceedings.

DESCRIPTORS: Conferences, Medical research, *Smell, Thresholds (Physiology), *Taste, Reaction (Psychology), Stimulation, Perception, Sense organs, Nervous system,

Biochemistry

Andreev, A. A.
A METHOD OF GROWING PROTEIN FEED YEAST. [1963] 4p
Order from ATS $3.50 ATS-30Q72R

Trans. of Soviet patent 146,179, (pub. in #Byulleten' Izobretenii (USSR) 1962, no. 7).

DESCRIPTORS: *Yeasts, *Proteins, Growth.

Dobry, A.
COACERVATION. [1963] 10p. (figs. omitted) 12 refs.
Order from SLA $1.10 63-18099

Trans. from Revue Canadienne de Biologie, 1942, v. 1, no. 4.

DESCRIPTORS: *Colloids, *Styrenes, Stability, Surface tension, Solvents, *Phase studies, *Solvent action, *Membranes, Semipermeability, *Osmotic pressure, *Cells (Biology).

Heimann, W. and Heinrich, B.
BEHAVIOR OF FLAVANOIDS IN OXIDATION SYSTEMS (Über das Verhalten von Flavonoiden in Oxydationssystemen). [1963] [13p] (figs refs omitted)
Order from SLA $1.60 63-20218

Trans. of Archiv der Pharmazie (West Germany) 1960, v. 293, p. 598-609.

DESCRIPTORS: *Oxidation, Fermentation, *Catalysts, *Oxidases, Catalysis, *Ascorbic acid, Enzymes, Phenols, *Vitamin P, *Quercetin, *Tyrosinase, *Organic pigments, Condensation reactions, *Anthoxanthin pigments.

The following biological pigments were added to the system ascorbic acid-polyphenol-polyphenol oxydase in order to observe their effect as polyphenolic redox catalysts: quercetin, dihydroquercetin, catechin, neohesperidin, quercitrin, and rutin. The significance of structure in regard to enzymatic oxydation of ascorbic acid was studied. Only quercetin, dihydroquercetin, and catechin had catalytic action. Oxidation was inhibited by cystein and glutathion but not by methionin. The system ascorbic acid-quercetin-polyphenol oxydase was not influenced by various sugars, amino acids, or peptides. Brenz catechin had a catalytic effect upon the oxidation of cyanin and rutin by polyphenol oxydase. The dehydration of glucose-6-phosphate was discussed in relation to its catalysts.

Savkina, I. G. and Evstigneev, V. B.
SPECTRAL AND PHOTOCHEMICAL PROPERTIES OF WATER SOLUBLE CHLOROPHYLL ANALOGS. [1963] [10]p. 23 refs.
Order from OTS or SLA $1.10 63-18609

Trans. of #Biofizika (USSR) 1963, v. 8 [no. 3] p. 335-343.

DESCRIPTORS: *Chlorophylls, *Absorption spectra, *Photochemistry, Fluorescence, Solvents, Solubility, Oxidation, Reduction (Chemistry), Spectroscopy.

A study was made of a series of properties of water soluble derivatives of chlorophylls a and b and pheophytins a and b, obtained by alkaline hydrolysis of the original pigments. Absorption spectra of the indicated compounds were measured in methanol, ethanol, and buffer solutions with pH 3, 5, 7, 9 and 11, and fluorescence spectra were measured in methanol and

phosphate buffer, pH 7. The ability of water soluble analogs of chlorophyll to undergo photooxidation by dissolved atmospheric oxygen was demonstrated, as was photoreduction by ascorbic acid in the presence of pyridine. (Author)

Senju, Ryoichi and Okimasu, Satoshi.
STUDIES ON CHITIN. PT. I. ON THE GLYCOLATION OF CHITIN AND THE CHEMICAL STRUCTURE OF GLYCOL CHITIN. PT. II. THE MOLECULAR FORMS AND THE DEGREES OF POLYMERIZATION OF GLYCOL CHITIN FROM THE POINT OF VIEW OF THE VISCOSITY OF ITS AQUEOUS SOLUTION, tr. by E. R. Hope. Sep 63, 12p 26refs DSIS T 70 J.
Order from NRCC NRCC C-4533

Trans. of [Nihon Nogei-Kagakkai Shi] (Japan) 1950, v. 23, no. 10, p. 432-441.
Another trans. of p. 432-437 is available from NRCC $1.00 as NRCC C-3850, NRCC TT-986, 1961, 15p.

DESCRIPTORS: *Chitin, Glycols, Molecular structure, Viscosity, Polymerization.

Shen, Gong-mou.
THE TRANSLOCATION AND DISTRIBUTION OF PHOTOSYNTHETIC PRODUCTS DURING THE VARIOUS STAGES OF GROWTH AND FROM THE VARIOUS LEAVES OF THE RICE PLANT: EXPERIMENTS WITH RADIOACTIVE CARBON (C^{14}), tr. by Robert Apedaile. [1963] [30]p (foreign text included) 30refs [CSIRO Trans]-6338.
Order from OTS or SLA $2.60 63-23740

Trans. of [Nung Yeh Hsüeh Pao] (Chinese People's Republic) 1960, v. 11, no. 1, p. 30-40.

DESCRIPTORS: *Cereals, *Plants (Botany), *Photosynthesis, Distribution, Growth, Radioactive isotopes, Carbon

Results of experiments on rice plants were as follows. (1) A decrease in light reduced the flow of photosynthetic products. (2) Each stage of the rice plant's growth had an appropriate area to which growth material was sent: in the tillering and intermode elongation stages, the material went to the young leaves; in the ear-developing stage, to the ears and stems; and in the heading and milk-ripe stages, to the ears. (3) During the tillering and intermode elongation stages, the highest leaf on the plant mainly retained its photosynthetic products in itself and its sheath; in the ear-developing stage some of the products went into the stems and ears; and in the heading stage a large amount entered the ears. In all stages, the products from the 2nd leaf went in large amounts to the transference area for that stage. The lowest leaves in the tillering and intermode elongation stages sent a large portion of products to the root system and stem culm base. After the ear-developing stage, photosynthesis in the 4th leaf was reduced.

Zholkevich, V. N.
ON SOME PROBLEMS OF BIOENERGETICS. 18 Oct 63, 14p 29refs JPRS: 21501.
Order from OTS $0.50 63-31963

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Biologicheskaya, 1963 [v. 28] no. 4, p. 562-573.

DESCRIPTORS: *Plants (Botany), *Respiration, *Thermochemistry, *Phosphorylation, Energy, Heat transfer, Oxidation.

A discussion is presented about the evaluation of efficiency of respiration as a source of energy for endothermic precesses of vital activity as well as of the mode of transmission of this energy in the living system. Some doubts are raised as to whether a fairly complete evaluation is possible of the respiration efficiency on the sole basis of oxidative phosphorylation. It is suggested that the energy balance of the tissue composed of total energy released by respiration (computed from the balance equation and) heat release might better suit the purpose. In the author's view, heat released by living tissues into the surrounding is of diverse origin, and that formed directly in the course of concomitant respiration makes but a part of total heat release. The latter is identified with the total loss of inner energy of the living system caused by the entire course of vital activity. If this be the case the efficiency of respiration is indicated by its capacity to compensate this inevitable loss and to maintain thereby the necessary free energy level. So far as the study of direct transmission pathways of the respiration energy for setting in a motion the life machine cannot entirely rely on classical biochemistry and thermodynamics the solution of this problem which is of the first-rate importance for the elucidation of the riddle of life requires some new approaches. Of particular importance in this connection are Szent-Gyorgyis concepts on the role of the quantum mechanical approacher to the biological processes involved in energy transmission. (Author)

Zuber, H. and Jaques, R.
ISOLATION OF SUBSTANCE P FROM CATTLE BRAIN (Isolierung von Substanz P aus Rinderhirn). [Nov 62] 3p. 4 refs.
Order from SLA $1.10 63-18797

Trans. of Angewandte Chemie (West Germany) 1962, v. 74 [no. 6] p. 216-217.

DESCRIPTORS: *Pregnandiols, Biological assay, *Tissue extracts, Brain, Drugs, Cattle, Fractionation,

Substance P, a smooth muscle stimulant, was isolated from cattle brain extract. The procedures used are described. The isolated fraction increased the activity of the chicken cecum. It increased the blood pressure of atropinized rabbits. Highly purified fractions were distinctly less active on the isolated rat uterus and in mice exerted no protective action against strychnine.

Botany

Kölle, C.
USE OF THE KRAFT SPOT TEST METHOD IN PLANT CULTURE FOR DETERMINING NICOTINE IN GREEN TOBACCO PLANTS [Anwendung der Tüpfelmethode nach Kraft in der Pflanzenzuechtung zur Nikotinbestimmung in Grünen Tabakpflanzen]. [1963] 8p
Order from K-H $8.00 K-H 12900a

Trans. of der Züchter (West Germany) 1961, v. 31, no. 6, p. 263-265.
Another trans. is available from SLA $1.10 as 63-14392 [1963] [8]p.

DESCRIPTORS: Chemical analysis, *Nicotine, *Tobacco, Plants (Botany), Genetics, *Paper chromatography.

For abstract see Technical Translations 10: 491, 1963.

Lavrenko, E. M. and Korchagin, A. A.
FIELD GEOBOTANY. 1963, 468p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Polevaya Geobotanika, Moscow, 1959].

DESCRIPTORS: *Plants (Botany), *Ecology, Soils, Climatology.

Porfiriev, V. S.
ON THE APPLICATION OF THE CONCEPT SERIES AND CYCLES BY THE STUDY OF THE CONIFEROUS BROADLEAVED WOODS (O Primenenii Ponyatii Serii i Tsikla pri Izuchenii Khvoino-Shirokolistvennykh Lesov) tr. by V. A. Soloduhin. [1963] [25]p. (foreign text included) 40 refs. [CSIRO] Trans. no. 5754.
Order from OTS or SLA $2.60 63-19606

Trans. of Mos[kovskoe] Obsh[chestvo] Ispy[tatelei] Prir[ody]. Byul[leten'] Otdel Biol[ogicheskii] 1960, v. [35]65, no. 3, p. 93-102.

DESCRIPTORS: *Trees, *Plants (Botany), Soils, Wood, *Ecology, *Forestry.

The paper generalizes the experience of applying the «series» and «cycle» concept to the study of mixed woods in the Eastern area of the USSR; the author's material is concerned with his original examination and careful study of the Volga-Kama Region (Tatar Autonomous Republic). The «series» and «cycle» are envisaged by the author as ecological groups of plant associations. The author has established seven serial cycles in respect to the dark coniferous broad-leaved and the broad-leaved dark coniferous woods of the Volga-Kama Region (Aegopodiosa, Mercurialiosa, Caricosa pilosae, Fruilcosa, Struthiopteridosa, Oxalidoso--Nemorosa, Nemoroso--Oxalidosa); the mentioned cycles are subdivided according to the species of their overground cover; the lattor determines the particular types of ecotopes characteristic for each cycle. The ecological coordination of series and cycles is presented by the system of their rows according to the humidity factor and soil richness; this scheme compiled according to V. N. Sukachev's principle was applied to the subzone of mixed woods for the first time; special indication was provided for the ecologo-coenotic areals of the arboreal species--the coenotic formers; its edificatory role is revealed quite specifically. (Author)

Smirnov, A. M. and Butenko, R. G.
NEW PROCEDURES IN THE STUDY OF PLANT PHYSIOLOGY. 15 Oct 63, 12p JPRS: 21460.
Order from OTS $0.50 63-31944

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 2, p. 73-79.

DESCRIPTORS: *Plants (Botany), Physiology, Seeds, Tissue culture, Cells (Biology).

Contents include: A culture of isolated roots and plant seeds (by Candidate of the Biological Sciences, A. M. Smirnov); A culture of isolated plant tissues and cells (By Candidate of the Biological Sciences, R. G. Butenko).

Tseng, Ch'eng-k'uei
ON THE TENTH ANNIVERSARY OF THE STUDY OF MARINE ALGAE IN CHINA (K Desyatiletiyu Izucheniya Morskikh Vodorosiei v Kitae). 10 Jul 63, 15p. 50 refs. Trans. A-1395.
Order from OTS or SLA $1.60 63-23183

Trans. of Botanicheskii Zhurnal (USSR) 1960, v. 45, no. 9, p. 1395-1399.

DESCRIPTORS: *Algae, *Marine biology, Scientific research, Ecology, Physiology, Taxonomy, China.

A summary of Chinese alcological research from 1950 to 1960.

Tseytlin, M. G. and Avetisyan, S. N.
PHOTOSYNTHESIS IN VARIOUS KINDS OF VINE SHOOTS (Fotosintez Raznokachestvennykh Pobegov Vinograda) tr. by V. A. Soloduhin. [1963] 6p (foreign text included). [CSIRO] Trans. no. 6306.
Order from OTS or SLA $1.10 63-23749

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962, [v. 22] no. 1, p. 32-34.

DESCRIPTORS: *Photosynthesis, *Vitaceae, Plants (Botany),

The effect on photosynthesis intensity of removing various kinds of grapevine shoots was experimentally investigated during a two-year period. The varieties of Khusayne, Saperavi, and White Kishmish were studied. Photosynthesis was more intense in the leaves of fruit-bearing shoots during the growing period, and more intense when the shoots were not pinched. In shoots with adventitious shoots growing from them, photosynthesis was about as intense as in shoots that had none. Photosynthesis in the leaves of fruitless shoots with two or three adventitious shoots was more intense than in the leaves of shoots with all their adventitious shoots or with adventitious shoots that were pinched off above the second leaf.

Medical Specialties and Equipment

Bianchini, Giuseppi.
PREPARATION OF DENTAL MATERIALS AND RESULTING PRODUCT. [1963] 4p
Order from OTS or SLA $1.10 63-20341

Trans. of French patent 1,322,358, P. V. no. 888,784, filed 22 Feb 62, granted 18 Feb 63, (convention filing: appl. no. 3,556/61, 24 Feb 62 Italy) by Giuseppi Bianchini and Giancarlo Polo (pub. in Bull[etin] Off[iciel de la] Prop[riété] Indust[rielle] (France) 1963, no. 13).

DESCRIPTORS: *Dentistry, *Teeth, *Glass, Colors, Wear resistance, Thermosetting plastics, *Acrylic resins.

The invention concerns a method for the preparation of thermosetting or self-curing materials useable in dentistry which are obtained by mixing binder materials such as monomeric or polymeric acrylic resins with impalpable powders of materials derived from treatment of previously purified crystalline or vitreous substances.

Likhtenshtein, E. A.
THE USE OF CYBERNETICS IN THE DEVELOPMENT OF DIAGNOSIS OF DISEASE. 11 Oct 63, 9p
JPRS: 21424.
Order from OTS $0.50 63-31929

Trans. of Vestnik Rentgenologii i Radiologii (USSR) 1963, v. 38, no. 4, p. 52-59.

DESCRIPTORS: *Diagnosis, *Cybernetics, Diseases, *Data processing systems, *Medical equipment, Algorithms.

Cybernetics, studying the general rules for information receiving and processing and control of complex systems has already produced a favourable influence in a number of fields of natural sciences and in practice. The main aim of physicians in the development of diagnostic application of computers is to determine distinctly the sources, channels and meaning of diagnostic information and to express all the medical data and problems with sufficient fullness and precision. Particularly it is of importance to establish quantitatively the specific diagnostic significance of the symptoms. For this purpose three features of each symptom may be employed, i.e. incidence, specificity and irreplaceability. Control of diagnostic processes cannot be considered as satisfactory. The following is required: intensive study by physicians and other specialists of the possibilities and ways of diagnosis formalization, ascertaining the best rules for detection, strict observance of the rule "necessary and sufficient" in selection of diagnostic information, and finally, creation of diagnostic macroalgorhythms (strict sequence of employing the methods) and of microalgorhythms (obtaining of information by an individual method). Putting into practice diagnostic machines will require changes in diagnostic algorhythms. All the methods of diagnosis should be divided into general, particular and special. It is conceivable that computers will be used not only for the final diagnostic information processing, but also for control of the diagnostic process itself. (Author)

Misyuk, N.
CYBERNETICS IN THE CLINIC. 13 June 63 [5]p.
FTD-TT-63-522.
Order from OTS or SLA $1.10 63-23627

Unedited rough draft trans. from Meditsinskaya Gazeta (USSR) 1963 [v. 26] 22 Feb, p. 3.

DESCRIPTORS: *Cybernetics, *Computers, *Diagnosis, Nervous system, *Tumors, *Brain, Medical equipment,

A discussion of experiences gained in the use of computer diagnosis of spinal cord compression syndromes and brain tumors.

Neurology and Psychiatry

Aladzhalova, N. A.
SLOW ELECTRICAL PROCESSES IN THE BRAIN. 1963, 300p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Medlennye Elektricheskie Protsessy v Golovnom Mozge, Moscow, 1962, 239p].

DESCRIPTORS: *Bioelectronics, *Brain, Cerebral cortex, Nerve cells, Radiation effects.

Khomskaya, E. D.
THE EFFECT OF A VERBAL INSTRUCTION ON THE VEGETATIVE COMPONENTS OF THE ORIENTING REFLEX IN [VARIOUS] LOCAL BRAIN AFFECTIONS. REPT. II. SPEECH REGULATION OF ORIENTING REACTIONS IN GENERAL CHANGES OF CORTICAL ACTIVITY. [1963] [9]p.
Order from OTS or SLA $1.10 63-19693

Trans. of Akademiya Pedagogicheskikh Nauk RSFSR. Doklady, 1961, no. 1, p. 117-122.

DESCRIPTORS: Verbal behavior, *Reaction (Psychology), *Autonomic nervous system, Reflexes, Brain, *Cerebral cortex, Bioelectronics, Tumors, *Speech recognition, Plethysmography, Motor reactions,

The autonomic reactions to the orienting reflex of 18 patients with brain lesions in the area of the posterior cranial fossa were studied. The vascular and cutaneous- galvantic reactions of the orienting reflexes (CGR) to continuous and intermittent acoustic stimuli of varying intensities and pitch were recorded. The reactions to signaling and non - signaling stimuli were compared. Responses to a passive stimulii showed a pathological lability, difficutty in extingishing these reactions, and depression of response to the stimuli. Introduction of verbal instructions which give a definite signalling meaning to sounds restored the depressed CGR and vascular reactions. When the CGR was initially labile or active, verbal instructions caused a gradual reduction in the spontaneous fluctuation with retention of the orienting reactions to the signalling stimuli. The instructions normalized the CGR and the vascular reactions and eliminated pathologically distorted reactions. These effects of verbal instruction

on the orienting reflex are cited as evidence of the preservation of the regulating function of the speech system in patients having general disorders of cerebral cortical activity.

Klimkovskii, M.
THE EFFECT OF A VERBAL INSTRUCTION ON THE VEGETATIVE COMPONENTS OF THE ORIENTING REFLEX IN VARIOUS LOCAL BRAIN AFFECTIONS. REPT. IV. SPEECH REGULATION OF ORIENTING REACTIONS IN DISEASE OF THE POSTERIOR LOBES OF THE CEREBRAL HEMISPHERES. [1963] [6]p.
Order from OTS or SLA $1.10 63-19692

Trans. of Akademiya Pedagogicheskikh Nauk RSFSR. Doklady, 1961, no. 2, p. 109-113.

DESCRIPTORS: Verbral behavior, *Reaction (Psychology), Reflexes, *Autonomic nervous system, *Tumors, *Cerebrium, Brain, Speech, *Speech recognition, Plethysmography.

The role of speech in disturbed vegetative reactions of 16 patients with cerebral tumors was studied. The responses of these patients to indifferent stimuli exhibited suppression of the vegetative components of the orienting reflex with varying degrees of depression and disturbance in stability. When verbal instructions were used to impart signalling significance to several indifferent stimuli which had been previously extinguished the orienting reactions to the extinguished signal were restored in all 16 patients. Verbal instructions weakened the pathological features of the vegetative reactions and insured restoration and strengthening of extinguished orienting reactions. The pathological vegatative reactions of the orienting reflex in persons with brain damage can be compensated for by use of verbal instructions which give signalling significance to the signal. By utilizing the preservation of the regulating role of speech in brain damage, substantial changes were effected in the vegetative components of the orienting reflex. (See also 63-19693)

Lozovskii, D. V.
TRYPTOPHAN METABOLISM IN SCHIZOPHRENIA. [1963] [11p] (refs omitted) 3 refs FASEB Manuscript no. S 77-3.
Order from OTS or SLA $1.60 63-23845

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 6, p. 616-620.

DESCRIPTORS: *Tryptophan, Metabolism, *Psychoses, Excretion, Urine, *Xanthic acids, Amino acids.

Urinary excretion of N-methylnicotinamide after tryptophan loads is lower in schizophrenics than in healthy persons. Urinary excretion of xanthurenic acid after tryptophan loads is increased in schizophrenia. In some schizophrenic patients, decreased urinary excretion of N-methylnicotinamide on conventional diet and significantly increased excretion of kynurenin after tryptophan loads were also noted. (Author)

Lustig, Bruno.
THERAPEUTIC METHODS IN SOVIET PSYCHIATRY. I. C. R. S. Medical Reports: Monographs in Soviet Medical Sciences no. 3. 1963, 63p 178refs
Order from Fordham University Press, New York, 58, N. Y.

DESCRIPTORS: Therapy, *Psychoses, Psychiatry, Chinese traditional medicine, Drugs, Glutamic acid, *Electroshock, Electrosleep, Insulin, *Hypnosis, *Hyperthermia, Phenothiazine derivatives, Quinine, Vitamins, Hormones, Antibiotics, *Epilepsy, Hypertension, *Addiction, Cybernetics, Aging (Physiology), *Psychotropic agents

Mellergaard, Mogens.
A MATHEMATICAL MODEL OF CLINICAL DIAGNOSIS. [1963] 9p (figs table omitted).
Order from SLA $1.10 63-20123

Trans. of Nordisk Medicin (Sweden) 1962, v. 68 [no. 44] p. 1413-1416.

DESCRIPTORS: *Diagnosis, *Mathematical models, Medical examination, Psychiatry, Diseases, Medical personnel

Clinical diagnosis of psychiatric diseases is treated mathematically by assigning values to the patient's symptoms or complaints. The examiner assigns value-coefficients to the symptoms according to the disease which they indicate; i. e., symptom A may be more important in disease S than in disease T. If disease S which also includes symptoms B and C is indicated, the examiner next looks for symptoms B and C. Symptoms present and absent may have the same values. In many cases the examiner assigns low values to symptoms described by a hypercondriac, who describes many symptoms and feelings. The discriminating symptom, or the phenomenon which can limit the right diagnosis among the presented possibilities, is sought. The errors of projecting a collective idea (psychiatric type) into a single group of symptoms is discussed. In this type of projection, called factor-analysis, variations in the single parts of the functions relate to some variation in the basic factors. The author concludes that in psychiatric diagnosis there has been a need for a multidimensional approach.

Pathology

ACTA PHYSIOLOGICA POLONICA, 1962, VOL. 13, NO. 4/5, P. 401-582. 1962, 1v 376refs PL-480 HEW.
Order from OTS $1.75 62-11063/4-5

Trans. of Acta Physiologica Polonica, 1962, v. 13, no. 4/5.

DESCRIPTORS: *Physiology, *Poland, *Exercise, *Chlorpromazine, *Radiation sickness, Blood serum, *Corticosteroid agents, *Blood proteins, *Estrogens, *Tryptophan, *Isoniazid, Brain, Stimulation, *Physostigmine, Atropine, Bioelectronics, *Histamine, *Absorption (Biological), *Shock (Pathology), Acetylsalicylic acid, Electrophotography, *Uterus, *Cholesterol, *Hypothermia, Pituitary hormones, *Respirators, *Fevers, *Electromyography, *Vitamin B complex, Biological assay.

Contents:

The influence of physical exercise on the blood levels of glucose, pyruvic acid, lactic acid, cholesterol and phospholipids, in radiation sickness in rats, by L. Markiewicz

Reactivity to chlorpromazine in acute radiation sickness, by A. Danysz and T. Zaczek

The effect of some corticoids on the level of copper in the blood serum of rabbits, by W. Banaszkiewicz and A. Chodera

Utilization of infused protein hydrolysate by the human organism, by K. Toczko and I. Chmielewska

Protein level and the trend of protein fraction changes in the serum of sheep treated with oestrone, by A. Slebodzinski and K. Wojcik

The effect of 5-hydroxytryptophan and iproniazyd on oxygen uptake by rat tissues in vitro, by E. Mietkiewski and J. Jankowska

Electrical activity of the "cerveau isolé" during caudate nucleus stimulation and its modification by eserin and atropine, by W. Traczyk and B. Sadowski

Effect of the removal of cortex cerebri and the quadrigeminal bodies region on histamine susceptibility of guinea pigs, by A. Przybylski

The effect of carbohydrates on fat absorption, II, by A. Michajlik

Comparative studies on enterogastrone obtained from different sections of the intestine, by J. Kaulbersz and S. Konturek

The effect of the hydrochloride of diethyl-aminoethyl-acetylsalicylate on inhibition of experimental shock, by J. Kiersz

A photoelectric recorder of mechanical movements, by J. Omelianowicz

Investigations on the oxytocic activity and chemical composition of the secretion of the uterin mucosa in rats treated with estrogens, by A. Trzebski, and others

Dependence of cholesterol level in blood serum, liver, and adrenals in rats on feed consisting of natural and and partly hydrogenated rape oil or low fat diet. by D. Rozynkowa and others

Alteration of the muscle tonus due to stimulation of the caudate nucleus in rabbits, by W. Traczyk and B. Sadowski

On dynamic heart efficiency in hypothermia, by W. Holobut and W. Stazka

Studies on the mechanisms of protective action of the electric current in histaminic shock of guinea pig, by A. Gromek

The effects of respirators on some physiological reactions to physical effort, by F. Spioch and others

Studies on the mechanism of the action of some pharmacological drugs in the so-called peripheral and central fevers, by Z. Korolkiewicz

Principles of intracellular recordings of bioelectrical phenomena in smooth muscles, by R. Wicinski.

Microbiological determination of folic acid in simple pharmaceuticals by the cup method, by H. Kakol and others

Proceedings of branches of the Polish Physiological Society.

POLISH MEDICAL JOURNAL, 1963, VOL. 2, NO. 2, P. 121-289. 1963, lv. 340refs PL-480 HEW.
Order from OTS $1.75 63-11409/2

DESCRIPTORS: Poland, *Medicine, *Pathology, *Chromosomes, *Polycythemia, *Blood proteins, *Hemopoietic system, *Hypertension, *Atherosclerosis, Immunity, Electrophoresis, *Plasma substitutes, Antigens and antibodies, *C-reactive protein, *Urokinase, *Mandelic acids, *Tumors, *Adrenal glands, *Haptoglobins, *Blood coagulation, *Hemophilia, *Anomalies, Heart, *Thrombin, *Cannulation, *Aorta, *Anemias, Cancer, Lipids, *Psychoses, *Neuroses, Wounds and injuries, *Hemorrhage, *Electroencephalography, Brain, *Paralysis, Spinal cord, *Fungi, *Tubercle bacillus, *Molds (Organisms), *Phonocardiography, Embryos.

Contents:

Chromosome studies of bone marrow cells in polycythemia vera, by Z. Traczyk

Neuraminic acid and blood serum protein in certain diseases of the hematopoietic system, by S. Chyrek-Borowska

The role of the kidneys in hypertension, by Z. Falda and A. Krotkiewski

The value of the immunoelectrophoretic test in the early diagnosis of atherosclerosis, by J. Mazurczak and B. Tenenbaum

The immunoelectrophoretic studies of serum globulins in some skin diseases, by Z. Onisk and A. Szydlowski

Antigenic properties of C-reactive protein in various diseases, by B. Tenenbaum

An investigation on the urokinase content in the urine of various animals and man, by K. Buluk and M. Bielawiec

The elimination of the vanillin-amygdalic acid in the urine of patients with essential arterial hypertension and pheochromocytoma, by B. Wocial

The comparison of three different methods of determination of vanillin-amygdalic acid in urine of healthy people (chromatographic, colorimetric and electrophoretic method) by B. Wocial

A new method of estimating haptoglobin, by W. Dobryszycka

A correlation between clot elasticity and cohesion and the blood fibrinogen level, by J. Bielski

A case of congential deficiency of factor V, by H. Cetnarowicz

Factor V and autoprothrombin C, by H. Kowarzyk and others

Effect of normal urine on thrombin activity, by H. A. Gaertner and others

Diagnostic value of cardiac catheterization in atrial septal defect, by A. Kustrzycki

Electrocardiographic study of atrial septal defect, by W. Bross and others

Right-side collateral circulation in coarctation of the aortic arch, by R. Fenigsen and K. Zrobkowa

Anemia of gastric cancer, by L. Cholewa and H. Nosek

Disturbances in neurohumoral control of concentration and composition of serum lipids in patients with schizofrenia and neurosis, by J. Patelski and others

Total protein concentration and the electrophoretic picture of the protein fractions in the serum of patients with schizophrenia and neuroses, by L. Depczynski and others

Electroencephalogram in subdural hematoma, by J. Trabka

Brudzinski's nuchal sign as a cerebral symptom also - Preliminary report, by H. Brokman and R. Michalowica

Paraparesis superior due to cervical spinal cord injury, by B. Pajak and R. Sznajder

Infection due to trichophyton Quinckeanum (Mouse favus) by I. Rdzanek and others
Evaluation of the Quick Vandiviere's method of testing the sensitivity of tuberculous bacilli to antibiotics, by L. Urbanska and S. Scheller
Experimental aspergillosis of the pleura in rabbis, by P. Krakowka and others
The value of electrocardiographic and phonocardiographic recordings of the foetal heart rate in diagnosing the life of the foetus in the second trimesters of pregnancy, by I. Roszkowski and others

Amitina, R. Z.
SINUS BRADYCARDIA IN HEMORRHAGIC NEPHROSO-NEPHRITIS. [1963] [8]p. FASEB Manuscript no. S 135-3.
Order from OTS or SLA $1.10 63-23839

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 12, p. 92-95.

DESCRIPTORS: *Heart, *Hemorrhage, *Nephritis, Etiology, Diagnosis, Diseases, Cardiac muscle

Sinus bradycardia is observed in approximately two-thirds of hemorrhagic nephroso-nephritis patients and can serve as a differential diagnostic symptom. In the majority of hemorrhagic nephroso-nephritis patients it is functional in nature and is dependent on extracardiac factors, especially on elevated tone of the vagus nerve. In some cases sinus bradycardia may be dependent on damage to the sinus node by serous hemorrhagic myocarditis or by massive hemorrhages in the region of the right atrium, which is a factor that merits extremely serious attention. In order to determine the genesis of sinus bradycardia in each case it is essential to study the clinical picture the level of myocardiac damage and ECG data. Pronounced hemorrhagic diathesis, the diffuse nature of damage to the myocardium and the absence of an atropine effect indicate sinus bradycardia of the cardiac origin. (Author)

Bekker, L. V. and Rogova, O. P.
DISTURBANCE IN THE HEMATOPOIESIS OF THE NEWBORN CHILD OF A MOTHER SUFFERING FROM ACUTE LEUKEMIA (Narushenie Gemopoeza u Novorozhdennogo ot Materi, Stradayushchei Ostrym Leikozom). 19 Apr 63 [5]p. 7 refs. NIH no. 4-21-63.
Order from OTS or SLA $1.10 63-19595

Trans. of Voprosy Okhr[any] Mater[instva] i Dets[tva] (USSR) 1962 [v. 7] no. 9, p. 79-81.

DESCRIPTORS: *Hemopoietic system, Blood, *Infants, *Women, *Leukemia, Pathology.

A case history.

Cayeux, Ph.
IMMUNOLOGICAL STUDY OF THE PRECIPITATING ANTIGEN SPECIFIC FOR STREPTOCOCCUS PYOGENES (GROUP A) TYPE 24 (Etude Immunologique de l'Antigène Précipitant Specifique du Type 24 de Streptococcus Pyogenes (Group A)). [June 63] 8p. 8 refs.
Order from SLA $1.10 63-18799

Trans. of Inst[itut] Pasteur [Paris]. Annales (France) 1962, v. 103, July, p. 24-31.

DESCRIPTORS: *Immunology, *Antigens and antibodies, *Streptococcus, Biological specificity.

"Protein M" was prepared from streptococcus group A, type 24 by different techniques of extraction at 100° C. This "protein M" is composed of a mixture of chemically different substances and contains several antigenic sites. (Author)

Chernysheva, N. N.
DETERMINATION OF CIRCULATION VOLUME AND LOSS OF ERYTHROCYTES IN ERYTHREMIA DIAGNOSIS. [1963] [11]p. 7 refs. FASEB manuscript no. S 134-3.
Order from OTS or SLA $1.60 63-23840

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 12, p. 84-87.

DESCRIPTORS: Blood cells, Erythrocytes, *Blood circulation, Diagnosis, *Blood volume, *Polycythemia

The method of determining the mass of erythrocytes with Cr^{51} is technically simple and sufficiently reliable and can be used under clinical conditions owing to the safeness of indicator doses of Cr^{51}. Determination of the quantity of circulating blood and the mass of erythrocytes is an additional criterion in differential diagnosis of erythremia and secondary erythrocytosis of various origin. (Author)

Dec, Lechoslaw.
BALLISTOCARDIOGRAM USED AS A TEST AFTER SMOKING AND NITROGLYCERIN TREATMENT IN THE DIAGNOSIS OF CORONARY VESSEL ATHEROSCLEROSIS. Paper from the convention of Polish Internist Association (no. 20). [1963] 5p. 9 refs
Order from SLA $1.10 63-18476

Trans. of [Polskie Archiwum Medycyny Wewnetrznej] 1960, v. 30, no. 7, p. 923-926.

DESCRIPTORS: *Ballistocardiography, *Cigarettes, *Smokes, Tobacco, *Angina pectoris, Atherosclerosis, Nitroglycerin.

Ballistocardiograms were recorded for 18 patients with myocardial infarct, after the smoking of one unfiltered cigarette following a 12 hour period without smoking. A distinct distortion of the ballistocardiogram occurred in all 18 cases. In a control group of 12 healthy persons, no essential changes were found with the exception of accelerated heart action. The distortion of the ballistocardiogram in these patients with myocardial infarct was generally connected with an I-J amplitude reduction. A complete curve distortion was present in nine cases. Nitroglycerine given sublingually to these cases resulted in normal ballistocardiograms of seven of them within three seconds to three minutes. These distortions of the ballistocardiogram after smoking show the unfavorable influence of nicotine on the heart muscle of persons with coronary disease. Ballistocardiography could be used as a diagnostic indicator of coronary disease.

Dmitieva, N. P.
SOME CHARACTERISTICS OF THE ULTRASTRUCTURE OF THE NUCLEOLUS IN CELL NUCLEI OF BROWN-PEARCE TUMOR. 24 Sep 63, 5p 23refs
JPRS: 21206
Order from OTS $0.50 63-31819

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 150, no. 5, p. 1146-1148.

DESCRIPTORS: Electron microscopy, *Cells (Biology), Nuclei (Biology), Tumors, Morphology, Cancer,

The presented material demonstrates that the structure and interrelationship of separate nucleolar ultrafine structures are conditioned by the functional state of the cells.

Frankfurt, O. S.
GENETICS OF TISSUE TRANSPLANTATION (Genetika Trapsplantatsii Tkanei) tr. by Tatiana Boldyreff. 30 Jul 63, 30p (figs refs omitted).
Order from OTS or SLA $2.60 63-23909

Trans. of Pat[ologicheskaya] Fiziol[ogiya i] Eksper[imental'naya] Ter[apiya] (USSR) 1961, v. 5 [no. 1] p. 74-[82].

DESCRIPTORS: Genetics, Tissues (Biology), *Transplantation, Genes, Plastic surgery, *Antigen-antibody reactions,

A literature survey which considers the following topics: genes of tissue compatibility in mice; genetics of transplants on man; immunological mechanism of the effect of genes of tissue compatibility; the role of genetic factors in the defense against irradiation disease; and possible solutions for the problem of tissue incompatibility.

Gross, F.
HORMONAL FACTORS IN ESSENTIAL HYPERTENSION (Hormonale Faktoren bei der Essentiellen hypertonie). [1963] 20p. 78 refs
Order from SLA $1.60 63-18860

Trans. of Deutsche Gesellschaft für Kreislaufforschung. Verhandlungen (West Germany) 1962, v. 28, p. 11-26.

DESCRIPTORS: *Hormones, Etiology, *Hypertension.

In human essential hypertension there is no absolute over-production of one or several known hormones, which can be made responsible for the rise in pressure. The excess production of aldosterone observed in malignant hypertension should be viewed as a consequence and not the cause of cardiovascular damage. The hypertension produced by endogeneous overproduction of adrenocortical hormones must be considered a secondary one, like the hypertension produced by overdosage of natural or synthetic cortical steroids. The hormones of the adrenal cortex have a permissive effect on the manifestation of different forms of experimental and probably also essential hypertension. Thyroid hormones can have a modifying effect on blood pressure in rats, but the findings on lowering experimental hypertension with antithyroid substances have not been applicable in man. Female sex hormones and different synthetic steriods can influence certain forms of experimental hypertension but have no effect in essential hypertension. The significance of hormonal factors for the pathogenesis of essential hypertension is thought to reside in a permissive effect within the normal activity of the endocrine glands participating in the regulation of blood pressure. (Extracted)

Gross, F.
PATHOGENESIS OF ESSENTIAL HYPERTENSION (Zur Pathogenese der Essentiellen Hypertension). [3 July 63] 19p. 60 refs.
Order from SLA $1.60 63-18722

Trans. of D[eu]tsch[es] Med[izinisches] Journal (West Germany) 1962 [v. 13] no. 16, p. 475-480.

DESCRIPTORS: *Hypertension, Etiology.

A literature survey.

Gul'ko, I. S.
CONTENT OF ZINC, COPPER, MANGANESE, CADMIUM, COBALT AND NICKEL IN BLOOD, ORGANS AND TUMORS OF CANCER PATIENTS (Soderzhanie Tsinka, Medi, Margantsa, Kadmiya, Kobal'ta i Nikelya v Krovi, Organakh i Opukholyakh Bol'nykh Rakom) tr. by Lydia Venters. Mar 63 [8]p. 42 refs.
Order from OTS or SLA $1.10 AEC-tr-5684

Trans. of #Voprosy Onkologii (USSR) 1961, v. 7, no. 9, p. 46-[51].

DESCRIPTORS: *Blood chemistry, *Tumors, *Cancer, Zinc, Copper, Manganese, Cobalt, Nickel, Cadmium.

Cancer is accompanied by a systematic change in the normal content of some microelements in blood and internal organs of cancer patients regardless of the primary localization of the tumor. In whole blood of the cancer patients: (a) the average content of Cu, Co and Ni is substantially increased, but zinc content is greatly decreased; (b) the concentration of Cu, Mn, Co in whole blood with a decreased hemoglobin content has a tendency toward further increase; (c) the concentration of zinc in serum with decreased hemoglobin content has a tendency toward further decrease, but its content in erythrocytes relative to their number tends to increase. The content of Zn, Cu, Cd, Ni in liver, especially with metastases present in it, and Cu, Cd, Co and Ni in the spleen of cancer patients has a tendency toward increase The concentration of Co in the stomach of cancer patients is greatly increased, but the average concentration of zinc is somewhat decreased. The content of Zn and Co in pancreas and Zn, Cu and Mn in the kidneys of cancer patients tend to decrease. The concentration of Cu, Co and Ni in the primary cancerous tumor is higher, than in the healthy "mother" tissue. The primary cancerous tumor and its metastases (in liver, lungs, lymph nodes) have a similar Zn, Cu, Mn, Cd, Co and Ni concentration. (Author)

Hackensellner, H. A.
THE BEHAVIOR OF THE BRONCHIAL MUCOSA IN LUNG CANCER. I. RELATIONS BETWEEN BRONCHIAL CARCINOMA, EPITHELIAL METAPLASIA, AND SMOKING. [1962] 43p (figs. omitted) 97refs
Order from SLA $4.60 63-18467

Trans. of Frankfurter Zeitschrift für Pathologie (West Germany) 1957, v. 68, no. 4, p. 361-382.
Another trans. is available from K-H $53.75 as K-H-6821-b [1962] 43p.

DESCRIPTORS: *Lungs, *Cancer, Cigarettes, *Smokes Tobacco, Mucous membranes, *Epithelium, Etiology

The significance of metaplastic epithelial changes in the lungs in relation to lung cancer, and the relationship of smoking to bronchial metaplasias were studied by microscopic analysis of lung sections of 72 cases of primary pulmonary cancer (bronchial cancer). The microscopic studies were done on the primary lesion, areas unaffected by the growth, the bronchial epithelium and the deeper mucosal layers of the epithelium. Metaplasias were present in 44 cases or 61.1%. These metaplasias were found most frequently in the superior lobe of the lung. Metaplasias were present more frequently in the cases of pavement-epitheliah carcinoma than with other types of bronchial cancer.

Hilden, T.
MODE OF EFFECT OF NEW HYPOTENSIVE AGENTS (Wirkungsweise Neuerer Hypotensiver Mittel). May 63, 18p. 40 refs
Order from SLA $1.60 63-18748

Trans. of mono. Hypertonie Symposion (no. 3) [Münster, 25-26 Aug 61] Stuttgart, 1962, p. 124-138.

DESCRIPTORS: Drugs, *Vasoactive agents, *Chlorothiazide diuretics, *Guanethidine, Toxicity, *Hypertension.

The therapeutic effectiveness in the treatment of hypertension and the toxicity of chlorothiazide, bretylium (Darenthin) and guanethidine are compared. Generally, guanethinide is considered the most effective. Its toxic side - effects are less annoying to patients than the other two drugs.

Hoptman, Julian.
MEDICAL VIROLOGY IN THE USSR: REVIEW OF THE LITERATURE. I. C. R. S. Medical reports: Monographs in Soviet Medical Sciences no. 1. 1962, 58p 412refs
Order from Fordham University Press, New York, 58, N. Y.

DESCRIPTORS: Viruses, *Virus diseases, *Bibliographies, Influenza viruses, Encephalitis viruses, Poliomyelitis, Hepatitis, Rabies, Measles, Smallpox, Cancer, Bacteriophages, Rickettsia, Adenoviruses,

Hoptman, Julian and Long, Chester W. de
IMMUNOCHEMISTRY AND RELATED FIELDS IN THE USSR: A BRIEF AND CRITICAL REVIEW OF THE LITERATURE. I. C. R. S. Medical Reports: Monographs in Soviet Medical Sciences no. 2. 1962, 25p 290refs
Order from Fordham University Press, New York, 58, N. Y.

DESCRIPTORS: *Immunity, *Biochemistry, *Bibliographies, Antigens and antibodies, Cancer, Burns, Radiation effects, Allergy, Sensitivity, Vaccines, Hematology, Transplantation, Immune serums,

Il'ina, L. I.
DRIVEN RHYTHM AS A METHOD OF ASSESSING THE FUNCTIONAL STATE OF THE CEREBRAL COR CORTEX IN HYPERTENSIVE VASCULAR DISEASE. [1963] [16]p. 17 refs. FASEB manuscript no. S 294-2.
Order from OTS or SLA $1.60 63-23013

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 9, p. 82-89.

DESCRIPTORS: *Thythm (Biology), Physiology, *Cerebral cortex, *Hypertension, *Electroencephalography, Stimulation, Photosensitivity

The changes of cortical rhythms resulting from intermitent photostimulation of 214 patients with hypertension were analyzed. Simultaneous recordings of the bioelectrical currents of several cortical areas during intermittent photostimulation gives an indication of the excitability and lability of the whole brain and the individual areas of the cortex. This procedure may become an accurate diagnostic aid in evaluating the functional changes in the brain of hypertensive patients.

Ird, E. A. and Konoplev, V. P.
SPONTANEOUS TUMORS IN RATS BRED IN THE NURSERIES OF THE ACADEMY OF MEDICAL SCIENCES OF THE USSR. [1963] [20p] FASEB Manuscript no. S 95-3.
Order from OTS or SLA $1.60 63-23841

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1962, v. 17, no. 11, p. 89-96.
Another trans. is available from OTS $0.75 in 63-21161, JPRS-17711, 19 Feb 63 [26]p.

DESCRIPTORS: *Tumors, Rats, *Laboratory animals, *Cancer, Genetics

A comparison was made of the oncological characteristics of mongrel rats bred in the nurseries of the Academy of Medical Sciences (AMS) of the USSR with those of other breeds and lines. It was shown that the AMS breed occupied an intermediate position between the "high-cancer" and the "low-cancer" rats in respect to total tumor frequency. The overwhelming majority of the tumors (86%) consisted of tumors of the mammary gland, hypophysis, and lymphatic tissue. A peculiarity of the breed is the absence of interstitial cell tumors of the testicles; nor did they develop pheochromocytomas. Generally, few malignant tumors were observed in our rats either of connective-tissue origin

(lymphosarcomas excepted) or cancerous. The breed is thus characterized as very suitable for experimental oncological investigations aimed toward explaining the carcinogenic effect of the most varied agents. (Extracted)

Khalkhodzhaeva, S. B.
POTASSIUM AND SODIUM METABOLISM IN PATIENTS WITH CARDIAC INSUFFICIENCY DURING TREATMENT WITH CARDIAC GLYCOSIDES AND POTASSIUM ACETATE. [1963] [17]p.
FASEB Manuscript no. S188-3.
Order from OTS or SLA $1.60 63-23866

Trans. of Klinicheskaya Meditsina (USSR) 1963, v. 41, no. 1, p. 61-66.

DESCRIPTORS: *Metabolism, Potassium, Sodium, Acetates, Heart, Diseases, *Cardiac glycosides, Drugs, *Electrolytes (Physiology).

Klimanskii, D. I.
THE SIGNIFICANCE OF DIASTASURIA IN THE DIAGNOSIS OF ACUTE SURGICAL DISEASES OF THE ABDOMINAL ORGANS. [1963] [15]p. 13 refs.
FASEB manuscript no. S 288-2.
Order from OTS or SLA $1.60 63-23906

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 8, p. 96-100.

DESCRIPTORS: *Glucoside hydrolases, Excretion, *Urine, Diagnosis, Surgery, Diseases, Pancreas, Liver, Abdomen, Medical examination.

Diastasuria with a level of 128-256 units was found not only in acute pancreatitis and cholecystopancreatis, but in other diseases of the abdominal cavity, specifically in acute appendicitis (especially its destructive forms), strangulated hernia, gastric hemorrhage, and diffuse peritonitis. Twenty-six percent of the patients with acute diseases of abdominal organs, including acute pancreatitis and cholecystopancreatitis, were found to have diastasuria in quantities at the upper limit of normal (64 units). If the diastase level in urine is high in patients with acute diseases of the abdominal cavity, its return to normal is paralleled by subsidence of the inflammatory process. It is, therefore, an indication of improvement in the patient's condition. Changes in the diastase content of the urine are generally paralleled by changes in the diastase content of the blood. Analysis of diastasuria is a valuable aid in diagnosing acute pancreatitis and in differentiating it from other diseases of the abdominal cavity. (Author)

Kochetygov, N. I.
A MODEL OF BURNS IN RABBITS WITH ISOLATED HEATING OF THE SKIN. 6 Sep 63, 2p. 2 refs.
JPRS: 20950.
Order from OTS $0.50 63-31690

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1963 [v. 7] no. 3, p. 74.

DESCRIPTORS: *Burns, *Skin, Muscles, *Heat tolerance,

Burns of various types and intensities were inflicted on isolated skin of rabbits. Air was injected between the skin and superficial musculature to isolate the skin. This air padding prevents the heating of skeletal muscles. When the skin temperature was raised to 85°C, the surface temperature of the muscles did not increase more than 3°C. Burns of 15 to 20% of the body surface were not fatal on the first day without simultaneous heating of the underlying muscles. When 30 to 35% of the isolated skin is heated to 50 to 55°, the animals may recover, although over 50% of the plasma of the burned area is lost. Heating of the same amount of body surface to 65°C caused no plasma loss in the burned area, but such temperatures were always fatal.

Komova, Z. A., Gorkin, E. N. and others.
DETERMINATION OF TRANSAMINASE ACTIVITY IN EPIDEMIC HEPATITIS (BOTKIN'S DISEASE). [1963] [10]p 5 refs. FASEB manuscript no. S189-3.
Order from OTS or SLA $1.10 63-23867

Trans. of Klinicheskaya Meditsina (USSR) 1963, v. 41, no. 1, p. 100-104.

DESCRIPTORS: *Hepatitis, Virus diseases, *Transaminases, Diagnosis, Alanines, Glutaric acids

Determinations of glutamic-alanine transaminase activity and serum iron are valuable laboratory tests in the diagnosis of Botkin's disease. The determination of glutamic-aspartic transaminase activity is less expedient for this purpose. The diagnostic value of glutamic-alanine transaminase determinations in Botkin's disease is reduced because positive results are often obtained in other diseases accompanied by jaundice, including tumors of the pancreas. No elevation of serum iron was observed in cases of jaundice caused by tumors of the pancreas. It is advisable to both serum iron and glutamic-alanine transaminase determinations for a more reliable differentiation of hepatocellular jaundice (Botkin's disease) from obstructive jaundice. (Author)

Lagova, N. D. and Konoplev, V. P.
MORPHOLOGICAL CHANGES IN A TRANSPLANTABLE CARCINOMA OF THE MAMMARY GLANDS OF RATS (CMR-1) AFTER HORMONE THERAPY. [1963] [16p] (figs omitted) 32refs FASEB Manuscript no. S 18-3.
Order from OTS or SLA $1.60 63-23881
figs available on loan from OTS

Trans. of Arkhiv Patologii (USSR) 1962, v. 24, no. 10, p. 38-44.

DESCRIPTORS: Morphology, *Carcinoma, *Mammary glands, Rats, *Hormones, Therapy, *Antineoplastic agents, Testosterone, Stilbestrol derivatives

Rats with transplantable mammary gland tumors from the second, eighteenth and thrity-second generations were treated before and after ovariectomy with synestrol, cortisone and testosterone. One group received testosterone following removal of the adrenal glands.

The most marked tumor regression occurred in the second generation tumors. Doses of 0.2 mg of synestrol alone or with ovariectomy and cortisone inhibited growth of second generation tumors by 85% to 95%. The two older generation tumors were not affected by this dosage. The cell changes and reactions to hormone therapy of the second generation tumors were similar to those of early human mammary gland carcinomas. The later generation tumors resembled older human mammary tumors both histologically and in their reaction to hormone therapy.

Lazareva, G. D.
THE DIAGNOSTIC VALUE OF PHONOCARDIOGRAPHY IN DETERMINING THE DEGREE OF MITRAL STENOSIS AND THE SEVERITY OF THE SCLEROTIC CHANGES IN THE MITRAL VALVE. [1963] [17]p. 40 refs. FASEB Manuscript no. S 409-2.
Order from OTS or SLA $1.60 63-23849

Trans. of Terapevticheskii Arkhiv (USSR) 1962, v. 34, no. 10, p. 69-76.

DESCRIPTORS: *Phonocardiography, Diagnosis, *Mitral stenosis, Heart, Adhesions (Medical)

The most reliable phonocardiographic sign of marked mitral stenosis is a considerable increase in the amplitude of the first sound at the apex of the heart, a lengthening of the Q–first sound interval to more than 0.09 sec, and the presence of a high-amplitude and high-frequency mitral diastolic murmur and an opening snap of the mitral valve. In severe mitral stenosis of the funnel-shaped type, as a rule a considerable increase in the amplitude of the first sound is absent, there is no mitral opening snap, the Q–first sound interval is only very slightly lengthened or even normal, and the mitral diastolic murmur is of low amplitude and frequency, or even completely absent. A moderate lengthening (to 0.09 sec) of the Q–first sound interval may be observed in patients with atherosclerotic cardiosclerosis and no involvement of the mitral valve, and in hypertensive patients, which lowers its diagnostic value to some extent as a test for determining the degree of stenosis of the mitral orifice. In certain cases the phonocardiogram cannot be a reliable criterion for judging the state of the heart valves. (Author)

Magazanik, N. A.
DYSPNEA AND THE WORK INVOLVED IN PULMONARY VENTILATION. [1963] [20]p. 28 refs. FASEB manuscript no. S 174-3.
Order from OTS or SLA $1.60 63-23865

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 12, p. 93-100.

DESCRIPTORS: *Dyspnea, *Respiration, *Lungs, Diseases, Ventilation, Medical examination, Diagnosis.

Energy expenditure on pulmonary ventilation can be measured with universal pneumotachograph. Under normal conditions with ventilation of 5-10 liter/min, the respiratory energy expenditure is small (approx. 0.4 kg-m/min). As ventilation increases, the amount of work involved also increases and at a quicker pace than the ventilation itself. This fact puts a limit to maximal pulmonary ventilation. In persons with lung disease and dyspnea, the energy expenditure on respiration exceeds the normal figures, and the degree of dyspnea is quite definitely related to the amount of respiratory effort required. When the respiratory resserve falls to 60%- i.e., the level at which dyspnea develops- the energy expenditure on respiration equals 2-3.3 kg-m/min. The sympton of shortness of breath is to a large extent determined by conscious perception of increased respiratory effort. Measurements of respiratory energy expenditure is an objective method of accurate and complete assessment of pulmonary function as far as ventilation is concerned. (Author)

Naccarato, R., Aresu, G., and Sirigu, F.
ELECTRON MICROSCOPIC FINDINGS IN IDIOPATHIC PULMONARY HEMOSIDEROSIS (Reperti di Microscopia Elettronica nell'Emosiderosi Polmonare Idopatica). [1963] [12p] (figs refs omitted).
Order from SLA $1.60 63-20226

Trans. of Arch[ivio] Ital[iano di] Anat[omia e] Istol[ogia] Patol[ogica] 1962, v. 36, p. 99-113.

DESCRIPTORS: *Hemochromatosis, Lungs, *Electron microscopy, Anemia, Antigen-antibody reactions.

A description is given of some light-and electron-microscopical findings in a biopsied piece of lung tissue (needle biopsy) from an adolescent with idiopathic pulmonary hemosiderosis (IPH). The results are briefly commented on and the authors arrive at the conclusion, with all reservations regarding limited interpretation of bioptical material, that the relative anatomic integrity of the pulmonic tissue would be indirect evidence for an immune-allergic process responsible for recurrent pulmonary hemorrhages. The observation of huge amounts of martial pigment in cells undergoing necrobiosis may help to explain the marked deficiency which is present in IPH. (Author)

Novikova, L. A.
SEVERAL VARIANTS OF THE COMBINED METHOD OF TREATMENT OF UTERINE AND OVARIAN CANCER, tr. by Paul V. DePorte. 23 May 61, 7p. NIH-no. 5-28-61.
Order from OTS or SLA $1.10 61-23828

Trans. of mono. Voprosy Klinicheskoi i Eksperimental'noi Onkologii, v. 3, Moscow, 1959, p. 197-202.

DESCRIPTORS: *Cancer, *Uterus, *Ovary, Radiotherapy, Surgery.

The use of surgery and radiation therapy in the treatment of cancer of the body and cervix of the uterus and the ovaries are reviewed. The route of metastasis from these organs are outlined. The method of administration and types of radiation therapy to be used in relation to the location of the primary lesion and the region of its possible metastasis are outlined. Statistics are given of the results of the treatment of 489 patients of cervical cancer; 65 patients with cancer of the body of the uterus and 61 patients with cancer of the ovaries. The study covered a period of eight years from 1945 to 1958. The types of radiation used, the

route of administration, and the time in relation to surgery were varied in the cases treated. The results obtained in by the various modes of treatment are compared. Radiation prior to uterine removal is recommended as the most effective regime for cancer of the body and the cervex of the uterus. The type and route of radiation therapy should be dependent upon the stage of disease, and the lymphatic drainage from the affected area. Cancer of the ovaries is best treated by surgical removal of the ovaries followed by radiation therapy. Unless there is extensive lymphatic me metastasis, it is generally not necessary to remove the uterus in cancer of the ovaries. The radiation therapy to be used following oophorectomy depends on the stage and spread of the disease.

Schreiber, H. W. and Reifferscheid, M.
ON THE TREATMENT OF LIVER CIRRHOSIS BY RESECTION (Zur Resektionsbehandlung der Leberzirrhose). [1963] [7p] (figs omitted)
Order from SLA $1.10 63-20222

Trans. of mono. Congrés de la Société Internationale de Chirurgie (no. 18) n.p., 1959. [Proceedings] p. 657-666.

DESCRIPTORS: Therapy, Diseases, *Liver, *Excision, Surgery.

Based upon animal experiments with rats and dogs poisoned by carbon tetrachloride a critical opinion is given about the coarse reactions of the cirrhotic liver after partial resection. Also the cirrhotic liver has a relative large tolerance towards tissue losses experimentally. Following to the resection and to the connected further liver damage a paradoxically different regeneration occurs as to structure and function which is larger than in ordinary parenchyme loss in cirrhosis and after other therapeutical measurements. The questions and problems of the resection in regard to its transfer to human cirrhosis are discussed. Its application cannot be recommended yet. (Author)

Shirshina, A. S.
COMBINATION OF LEUKEMIA AND PREGNANCY, tr. by Z. D. Knowles. 21 May 63, 3p.
NIH no. 5-28-63.
Order from OTS or SLA $1.10 63-19686

Trans. of Akusherstvo i Ginekologiya (USSR) 1956, v. 32, no. 1, p. 75-76.

DESCRIPTORS: *Leukemia, *Pregnancy, Cancer.

A case history.

Sigstad, Helge.
IODIDES AS SOURCES OF ERROR IN THE CHEMICAL TESTING FOR HEMATURIA. [1963] 5p ([Eng.] refs omitted) 3refs
Order from SLA $1.10 63-18945

Trans. of Nordisk Medicin (Sweden) 1960, v. 63, no. 18, p. 565-566.

DESCRIPTORS: *Urinalysis, Colorimetric analysis, Blood, Errors, *Iodides

Urine tests for blood in which the hemoglobin acts as a peroxidase to oxidize indicators such as guaiac, benzidine or ortholidine may give a false positive in the presence of traces of such inorganic materials as copper, bromides, or iodides. Iodides are the most frequent cause of error in such tests. These tests should not be used for patients who have been on any type of iodine therapy until there has been sufficient time interval after the last dose of the drug for its excretion through the urine to be complete. The bulk of the iodide intake is excreted in the first 12 hours after administration. After one or 2 days 80% of the iodine will have been excreted.

Verstraete, M.
THE DIAGNOSIS OF RENAL VASCULAR HYPERTENSION (De Diagnose van Renale Vasculaire Hypertensie). [1963] 10p (figs tables [refs] omitted).
Order from SLA $1.10 63-20225

Trans. of Belgisch Tijdschrift voor Geneeskunde, 1961, v. 17, p. 881-898.

DESCRIPTORS: Diagnosis, *Hypertension, *Kidneys, *Angiography, *Blood circulation, Obstruction (Physiology).

The various procedures used to diagnosis renal hypertension are reviewed and evaluated. A history of recent lumbar trauma preceeding the onset of a persistent hypertension is an indication of renal circulatory damage. An abdominal murmur which can be determined by careful auscultation is frequently present in renal stenosis. Aortography is considered the most reliable diagnostic procedure, having been found conclusive in 14 of 34 hypertensive cases. The Howard test of urinary flow and sodium analysis from each kidney, the Etamon test of the effects of tetraethyl ammonium chloride on blood pressure, and radioisotope renograms are considered of uncertain value in the diagnosis of renal hypertension.

Vilanova, X. and Aguadé, Pinol.
MIGRATING SUBACUTE NODULAR HYPODERMATITIS (Hypodermite Nodulaire Subaiguë Migratrice). [1963] [42p] (figs. refs omitted)
Order from SLA $4.60 63-20265

Trans. of Annales de Dermatologie [et de Syphiligraphie] (France) 1956, v. 83, no. 4, p. 369-404.

DESCRIPTORS: *Tumors, *Skin, Infections, Tonsillitis, Diagnosis, Etiology

A new syndrome is established on the bases of 11 case histories and an examination of the literature.

Pharmacology and Toxicology

MEDICINAL APPLICATIONS OF DIGESTIVE ENZYMES STABLE IN ACID MEDIA. [1963] 10p 2refs
Order from OTS or SLA $1.10 63-20031

Trans. of French medical patent M 1156, appl. 1 Sep 60 [granted 5 Mar 62] by Taisho Pharm Co.

DESCRIPTORS: *Enzymes, *Gastrointestinal system, Toxicity; Diseases, Drugs, Stability, Hydrogen ion concentration.

The invention concerns the application of a multi-enzyme, stable in acid media and having both proteolytic and anylolytic activity, the extract of a new strain of the fungus Aspergillus oryzae, a microporous variety called TPR 18, as a remedy for gastrointestinal troubles like apepsia, gastroptosis, anorexia, dyspepsia and the like. (Author)

METHOD FOR THE PRODUCTION OF PURE PARAHYDROXYPHENYLSALICYLAMIDE. Sep 63.
Order from TTIS $3.60 TTIS NS 138

Trans. of Polish [patent] 46, 639, by Pharmaceutical Cooperative 'Isopharm', appl. 21 Dec 60, pub. 15 Mar 63.

DESCRIPTORS: *Amides, *Salicyclic acids, *Phenyl radicals, Hydroxides, *Drugs, Production

Baikina, V. M. and Korchagin, V. B.
A STUDY OF CHLORTETRACYCLINE DRUGS BY THE METHOD OF COUNTERCURRENT DISTRIBUTION. [1963] 7p
Order from ATS $6.50 ATS-37Q72R

Trans. of #Antibiotiki (USSR) 1953, v. 8, no. 4, p. 314-319.

DESCRIPTORS: *Tetracyclines, Drugs, *Chlortetracycline.

Baumann, Anny.
THE PERMEABILITY OF THE PLACENTA TO LEAD. [1963] 8p. (figs. omitted) 18 refs
Order from SLA $1.10 63-18446

Trans. of Arch[iv] f[ür] Gynäk[ologie] (Germany) 1933, v. 153, p. 584-[592].

DESCRIPTORS: Lead, Permeability, *Placenta, Absorption (Biological), *Embryos, *Lead poisoning,

Bedi, Judit and Krall, Geza.
SINGIFICANCE OF SMOKING IN THE DEVELOPMENT OF ENCEPHALOPATHIA HYPERTONICA. Report from the Pathological Section of the Hungarian Institute of Public Health. [1963] 11p
Order from K-H $11.00 K-H 13134 a

Trans from Nepegeszsegugy (Hungary) 1963, v. 44 no. 2.

DESCRIPTORS: *Cigarettes, *Smokes, Tobacco, Brain, *Hypertension.

Behrens, Behrend.
INVESTIGATIONS ON THE ABSORPTION, EXCRETION AND DISTRIBUTION OF VERY MINUTE AMOUNTS OF LEAD. [1963] [30]p. 15 refs.
Order from SLA $2.60 63-18452

Trans. of [Naunyn-Schmiedeberg's] Arch[iv] f[ür] Exp[erimentelle] Path[ologie] und Pharmakologie (Germany) 1925, v. 109, p. 332-357.

DESCRIPTORS: Lead, *Absorption (Biological), Exretion, *Lead poisoning, Tolerances (Physiology),

Behrens, Behrend and Baumann, Anny.
THE PHARMACOLOGY OF LEAD. IV FURTHER INVESTIGATIONS ON THE DISTRIBUTION OF LEAD CARRIED OUT WITH THE AID OF AUTOHISTORADIOGRAPHY. [1963] [9]p. (figs. omitted) 6 refs
Order from SLA $1.10 63-18445

Trans. of Z[ei]tschr[ift] f[ür] d[ie] Ges[amte] Exper[imentelle] Med[izin] (Germany) 1933, v. 92, p. 241-[250].

DESCRIPTORS: *Tracer studies, *Autoradiography, Lead, Toxicity, Tissues (Biology), Bone, Liver, *Lead poisoning.

(See also 63-18446)

Behrens, Behrend and Baumann, Anny.
THE PHARMACOLOGY OF LEAD. X. THE RELATION OF THE DEPOSITION OF LEAD TO CALCIUM METABOLISM. [1963] [10]p. (figs. omitted).
Order from SLA $1.10 63-18444

Trans. of Z[ei]tschr[ift] f[ür] d[ie] Ges[amte] Exper[imentelle] Med[izin] (Germany) 1933, v. 92, p. 251-[264].

DESCRIPTORS: Lead, Toxicity, *Calcium, *Metabolism, Bone, *Lead poisoning, Absorption (Biological),

(See also 63-18445)

Behrens, Behrend and Behrens, Hans Ommo.
THE PHARMACOLOGY OF LEAD. VI. A METHOD OF DETERMINING SMALL QUANTITIES OF LEAD. [1963] [10]p. 10 refs.
Order from SLA $1.10 63-18448

Trans. of [Naunyn-Schmiedeberg's] Arch[iv] f[ür] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (Germany) 1932, v. 164, p. 501-508.

DESCRIPTORS: Lead, *Lead poisoning, *Tracer studies, Toxicity, Quantitative analysis,

Belen'kaya, N. Ya.
ELECTROENCEPHALOGRAPHIC STUDY OF PARANOID SCHIZOPHRENICS WITH THE USE OF MERATRAN (Elektroentsefaloskopicheskie Issledovaniya Bol'nykh Paranoidnoi Formoi Schizofrenii pri Primenenii Meratrana) tr. by Wanda Feeley.
July 61, 16p. PSC no. 60-389.
Order from OTS or SLA $1.60 63-19117

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) 1960, v. 60 [no. 2] p. 224-233.

DESCRIPTORS: *Electroencephalography, Psychiatry, Drugs, *Psychoses, Therapy, *Psychotropic agents, Piperidine derivatives, CNS stimulants,

The effects of meratran (pyridrol) on the bioelectrical patterns of 40 schizophrenics were studied. Of this group - 9 patients had paranoid delusions, 17 were in the hallucinatory delusional state, 7 had paraphrenic delusions, and 7 had secondary catatonia. Electroencephalographic recordings of each class of patients were compared with those of a normal, control group. The general changes in the cortical bioelectric currents which were characteristic for each form of schizophrenia were determined before administration of the drug. Electroencephalograms were done at varying intervals after drug administration. The bioelectrical changes recorded showed that different changes in the bioelectric mosaic occurred in each of the 3 phases of the disease. These changes were dependent upon the stage of development of the psychosis. Patients with paranoid and hallucinatory delusional states had a consistently increased activity of the bioelectric mosaic after meratran therapy. Patients with manifestations of secondary catatonia and with paraphrenic change of delusions had no increase in the activity of the bioelectric mosaic following meratran therapy. Meratran is recommended as a pharmacological prognostic test in schizophrenic diagnosis and treatment.

Bertrand, J., Loras, B. and others.
APPLICATION OF AN ISOTOPIC DILUTION METHOD TO THE STUDY OF THE SECRETION AND METABOLISM OF CORTISOL (Application d'une Methode de Dilution Isotopique à l'Étude de la Sécrétion et du Métabolisme du Cortisol). [June 63] 5p. 15 refs.
Order from SLA $1.10 63-18801

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1963, v. 156, p. 1835-1839.

DESCRIPTORS: *Tracer studies, *Secretion, Drugs, *Metabolism, *Corticosteroid agents, Growth substances.

In 31 children aged 1 day to 15 years and in 6 adults, the level of secretion and metabolism of cortisol were studied after i.v., injection of 0.25 to 1 microcurie of 4-^{14}C-hydrocortisone (technique of Cope and Black). This method was used more specifically for the problems raised by the possible action of human growth hormone on adrenal secretion and the role of hydrocortisone synthesis in the pathogenesis of the "salt-losing syndrome". (Author)

Bianchi, M. and Fargier, M. C.
EFFECT IN REGARD TO TIME OF RESERPINE ON THE ADRENAL MEDULLA (Étude dans le Temps de l'Effect de la Réserpine sur la Médullosorrénale).
[June 63] 6p. 19 refs.
Order from SLA $1.10 63-18803

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1963, v. 156, p. 1797-1802.

DESCRIPTORS: *Reserpine, Drugs, Adrenal glands, *Epinephrine, Levarterenol, Pyrocatechol, Toxicity, Vasoactive agents,

Bickert, Friedrich-Wilhelm.
INVESTIGATIONS OF THE INFLUENCE OF INDUSTRIAL POISONS UPON THE FORMATION OF IMMUNE BODIES. I. LEAD. [1963] 30p. 17 refs
Order from SLA $2.60 63-18447

Trans. of Arch[iv] f[ür] Hyg[iene und Bakteriologie] (Germany) 1931, v. 106, p. 271-[298].

DESCRIPTORS: *Lead poisoning, Industrial medicine, Lead, *Antigens and antibodies, Immunity,

Bouchet and Labayle.
TOBACCO POISONING AND THE VIIITH PAIR. [1962] 9p.
Order from K-H $11.00 K-H 9092-a

Trans. of Ann[ales] d'Oto-Laryng[ologie] (France) 1948 [v. 65] no. 3, p. 137-142.
Another trans. is available from K-H $11.00 as K-H-9092-a [1962] 9p.

DESCRIPTORS: *Tobacco, Poisoning, Respiratory system, *Auditory nerve.

Bilai, V. I.
ANTIBIOTIC-PRODUCING MICROSCOPIC FUNGI.
1963, 200p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, D. C.

Trans. of mono. [Mikroskopicheskie Griby-Produtsenty Antibiotikov, Kiev, 1961, 181p].

DESCRIPTORS: *Fungi, *Antibiotics, Chemical properties.

Buyanov, V. V. and Kisin, I. E.
THE EFFECT OF EUPHYLLIN, PAPAVERINE, NITROGLYCERIN AND CHLORACIZINE ON THE TONE OF THE CORONARY VESSELS AND THE OXYGEN ABSORPTION BY THE MYOCARDIUM OF THE HEART ISOLATED BY LANGENDORF'S METHOD [1963] [12p] 11refs FASEB manuscript no. S 208-3.
Order from OTS or SLA $1.60 63-23874

Trans. of Akademiya Medisinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 36-41.
Another trans. is available from OTS $2.75 in 63-21331, JPRS-18152, 18 Mar 63 [142]p.

DESCRIPTORS: Drugs, *Vasoactive agents, *Adenine, *Nitroglycerin, *Phenothiazines, Blood vessels, Heart, *Cardiac muscles, Oxygen, Absorption (Biological).

In the heart isolated by Langendorf's method and perfused with Ringer-Locke solution, euphyllin, papaverine and nitroglycerin, which dilate the coronary vessels, at the same time increase the oxygen absorption by the heart. In the same experimental conditions, chloracizine decreases the oxygen absorption by the heart. The dilatation of the coronary vessels under these circumstances is of short duration, and usually replaced by a slight constriction, the result of a decrease in the energy requirements of the heart. (Author)

Cession-Fossion, A.
ORIGIN OF THE HYPERSENSITIVITY TO CATECHOLAMINES PROVOKED BY RESERPINE AND GUANETHIDINE (Sur l'Origine de l'Hypersensibilite aux Catecholamines Provoquée par la Réserpine et la Guanéthidine). [June 63] 3p. 4 refs.
Order from SLA $1.10 63-18791

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1963, v. 156, p. 1935-1936.

DESCRIPTORS: Sensitivity, Antigen-antibody reactions, Epinephrine, Drugs, *Reserpine, *Guanethidine.

Pretreatment of rats with reserpine (1 mg./Kg.) or guanethidine (10 mg./Kg.) produces hypersensitivity to exogenous catecholamines (epinephrine and norepinephrine (0.1 µg.). This hypersensitivity is markedly reduced by a norepinephrine perfusion (200 - 400 µg./Kg.) and reappears immediately after a new administration of guanethidine or reserpine. (Author)

Covelle, Marie.
PREPARATION OF 3-AND 5-IODOSALICYLIC ACIDS, CRYPTOTOXIC POWER AND PHARMACOLOGICAL CHARACTERISTICS. [1963] 12p (formulae omitted) 21refs
Order from SLA $1.60 63-20248

Partial trans. (p. 235-245) of [Annali di Chimica] (Italy) [1941] v. 31, p. 235-[254].

DESCRIPTORS: Drugs, Antigens and antibodies, *Toxins and antitoxins, *Iodides, *Salicylic acids, *Biological assay, Antibiotics.

Danckwortt, P. W. and Jürgens, E.
CONTRIBUTIONS TO THE TOXICOLOGY OF LEAD AND ITS COMPOUNDS. VI. DISTRIBUTION OF LEAD IN THE ORGANISM, PARTICULARLY IN THE BONES, AND THE TOXICITY OF LEAD SOLUTIONS FOR FISH. [1963] 13p. 9 refs.
Order from SLA $1.60 63-18442

Trans. of Arch[iv] d[er] Pharmazie (Germany) 1928, v. 266, no. 7, p. 492-501.

DESCRIPTORS: Lead, *Lead poisoning, Toxicity, *Bone, *Fishes, Tissues (Biology),

Diamant, M.
TESSALON IN VAGUS COUGH PRODUCED FROM THE EAR (Tessalon bei vom Ohr Ausgelöstem Vagus-Husten). [1963] 5p 6refs
Order from SLA $1.10 63-16521

Trans. of Practica Oto-Rhino-Laryngologica (Switzerland) 1957, v. 19, p. 393-343 [sic].
Another trans. is available from SLA as 58-609.

DESCRIPTORS: Drugs, *Anesthetics, *Vagus nerve, *Ear, Otorhinolaryngology, Stimulation.

The effect of Tessalon on the vagus nerve was tested in man in whom it is possible to provoke a cough reflex by stimulating the ramus auricularis vagi along its course in the lower wall of the auditory meatus. In all the test persons the cough reflex was completely blocked 20 minutes after subcutaneous injection of 1 ampul of Tessalon (5 mg); this was also true of patients in whom cavities were present following radical operations, fenestration and the like. In one case in particular, an operated tumor in the jugular glomus with paresis of the recurrent laryngeal nerve, it was possible to carry out the necessary cleansing manipulations without the reappearance of the former subjective disorders marked by a very unpleasant tendency to cough. (Author)

Flury, F.
LEAD: THE CIRCULATION. [1963] 12p 46refs
Order from SLA $1.60 63-20414

Partial trans. (p. 1747-1754) of Handbuch der Experimentellen Pharmakologie (Germany) [1934] v. 3, pt. 3, p. 1575-1889.

DESCRIPTORS: *Lead poisoning, *Cardiovascular system, Lead, Blood circulation,

Flury, Ferdinand and Wirth, Wolfgang.
METHYL ALCOHOL AND POISONOUS METHYL COMPOUNDS. [1963] 7p 11refs
Order from SLA $1.10 63-20092

Trans. of Arch[iv] f[ür] Gewerbepath[ologie] u[nd] Gewerbehyg[iene] (Germany) 1936, v. 7, p. 211-226.

DESCRIPTORS: *Methanols, Poisons, Toxicity, *Poisoning, *Methyl radicals

Flury, F[erdinand] and Zernik, F[ranz].
DICHLOR-DIETHYL SULPHIDE (MUSTARD GAS). [1963] 9p 9refs
Order from SLA $1.10 63-20407

Trans. of mono. [Schädliche Gase, Dampfe, Nebel Rauch- und Staubarten] (Harmful Gases) Berlin, 1931, p. 363-367.

DESCRIPTORS: *Mustard gas, *Poisonous gases, Poisoning, Sulfides, Chlorides, Ethyl radicals, Physical properties.

Flury, Ferdinand and Zernik, Franz.
IRRITANT GASES, THEIR ACUTE AND CHRONIC EFFECTS AND SEQUELAE. [1963] 13p
Order from SLA $1.60 63-20413

Trans. of mono. Schädliche Gase, Dampfe Nebel Rauch- und Staubarten (Harmful Gases) Berlin, 1931, p. 76-84.

DESCRIPTORS: *Poisonous gases, Inflammation, Respiratory system, Solubility.

Flury, F[erdinand] and Zernik, F[ranz].
METHYL BROMIDE. [1963] 3p 14refs
Order from SLA $1.10 63-20408

Trans. of mono. [Schädliche Gase, Dampfe Nebel Rauch- und Staubarten] (Harmful Gases) Berlin, 1931, p. 309.

DESCRIPTORS: *Poisonous gases, Poisoning, *Methyl radicals, *Bromides.

Flury, F[erdinand] and Zernik, F[ranz].
NICKEL CARBONYL. [1963] 2p 4refs
Order from SLA $1.10 63-20083

Trans. of mono. [Schädliche Gase, Dampfe, Nebel, Rauch-und Staubarten] (Harmful Gases) Berlin, 1931, p. 252-253.

DESCRIPTORS: *Nickel compounds, *Carbonyl radicals, *Poisonous gases, Toxicity.

Flury, Ferdinand and Zernik, Franz.
PHOSGENE. [1963] 9p 14refs
Order from SLA $1.10 63-20410

Trans. of mono. [Schädliche Gase, Dampfe Nebel Rauch- und Staubarten] (Harmful Gases) Berlin, 1931, p. 222-228.

DESCRIPTORS: *Phosgene poisoning, Phosgene, *Poisonous gases, Physical properties.

Flury, F[erdinand] and Zernik F[ranz].
VANADIUM PENTOXIDE. [1963] 2p 2refs
Order from SLA $1.10 63-20082

Trans. of mono. [Schädliche Gase, Dampfe, Nebel, Rauch- und Staubarten] (Harmful Gases) Berlin, 1931, p 249-250.

DESCRIPTORS: *Vanadium eompounds, Oxides, *Poisonous gases, Toxicity.

Herken, Hans, Kewitz, Helmut, and Klempau, Ingeborg.
INACTIVATION OF CONVULSANTS BY HEXACHLOROCYCLOHEXANE. [12 June 55] 18p. 28 refs.
Order from SLA $1.60 63-18451

Trans. of [Naunyn-Schmiedeberg's] Archiv für Experimentelle Pathologie und Pharmakologie (West Germany) 1952, v. 215, p. 217-230.

DESCRIPTORS: *Convulsions, Drugs, Inhibition, *Hexachlorocyclohexanes.

Hevesy, G. and Wagner, O. H.
THE DISTRIBUTION OF THORIUM IN THE ANIMAL ORGANISM. Dec 45, 6p. 14 refs
Order from SLA $1.10 63-18449

Trans. of [Naunyn-Schmiedeberg's] Archiv f[ür] Experimentelle Pathologie und Pharmakologie (Germany) 1930, v. 149, p. 336-342.

DESCRIPTORS: *Thorium, Tissues (Biology), Tracer studies, *Absorption (Biological), *Cancer, Toxicity, *Metal poisoning,

Jaques, R.
PROTECTION AGAINST LETHAL TRYPSIN SHOCK IN GUINEA PIGS (Schutz Gegenüber Letalen Trypsinschock am Meerschweinchen). [1963] 4p 5refs
Order from SLA $1.10 63-16599

Trans. of Helvet[ica] Physiol[ogica] et Pharmacol-[ogica] Acta (Switzerland) 1957, v. 15, p. C69-C71. Also available from SLA as 58-831.

DESCRIPTORS: Drugs, *Shock (Pathology), *Trypsin, *Trypsin inhibitors, Enzymes, Anticoagulants.

Substances with different chemical constitutions and different types of pharmacological action were tested for their protective effect in guinea pigs on trypsin

shock. The substances that were effective against shock can be divided roughly into 2 groups, the first including those with anticoagulant action, the second those without any direct or indirect anticoagulant effect. In the first group we find heparin, Manuronate (R) and trypsin, in the second proteus polysaccharides, Colcemide (R), soybean antitrypsin and isopropyl-norepinephrine. Quantitatively proteus polysaccharides and Colcemide are the most active substances, followed by the polysaccharides heparin and Manuronate with an action on coagulation. (Extracted)

Kalinowski, K. and Piotrowska, A.
BROMOCOULOMETRIC MICRODETERMINATION OF CHLORTETRACYCLINE HYDROCHLORIDE AND OXYTETRACYCLINE HYDROCHLORIDE. [1963] 5p
Order from ATS $8.25 ATS-38Q72P

Trans. of Acta Polon[iae] Pharm[aceutica] 1953, v. 20, no. 2, p. 199-204.

DESCRIPTORS: Hydrogen compounds, Chlorides, *Tetracyclines, *Chlortetracycline, *Oxytetracycline, Bromides.

Kasavina, B. S., Lirtsman, V. M., and Muzykant, L. I.
MUCOPOLYSACCHARIDES IN THE PROCESS OF TISSUE REGENERATION: THE ROLE OF HYALURONIC ACID IN WOUND REPAIR. [1963] [9]p. 24 refs.
Order from OTS or SLA $1.10 63-19458

Trans. of Eksperimental'naya Khirurgiya [i Anesteziologiya] (USSR) 1959 [v. 4] no. 4, p. 12-19.

DESCRIPTORS: *Mucopolysaccharides, Tissues (Biology), *Regeneration, *Hyaluronic acid, *Wounds and injuries, Healing, Burns, Drugs.

A clinical experimental study was made of the effect of hyaluronic acid upon the process of wound repair. Experiments were run on animals and surgical patients. Luronit, a preparation of hyaluronic acid obtained from the vitreous body of cattle was applied to the gauze bandages placed directly oner the wound. Biochemical, morphological, and histologic studies were made to analyze the tissue reactions. The experimental findings indicate shifts in the hyaluronic acid content during the process of wound repair. It is accumulated during the early period of regeneration, and gradually falls off as the process of collagen formation continues. Clinical observations demonstrate that luronit promotes granulation growth. These clinical findings have shown that this preparation of hyaluronic acid can be employed (externally) for stimulating the regeneration processes in slow-healing wounds.

Katagiri, Ken.
PREPARATION OF TRIOSTIN, A NEW ANTIBIOTIC, tr. by R. E. A. 17 June 63, 11p. NIH no. 6-31-63.
Order from OTS or SLA $1.60 63-23180

Trans. of Japanese patent announcement Sho 36-9150 (1961) appl. 25 Sep 59 as Sho 34-30803 (1959) by Shionogi Co., Ltd., announced 30 June 61.

DESCRIPTORS: *Antibiotics, *Streptomycins, Drugs, Streptomyces.

The invention is concerned with a method for the preparation of triostin, a new antibiotic, which is obtained from the culture filtrate and the mycelia of Streptomyces-S-2-210 a member of the Actinomycetales. (Author)

Kisin, I. E. and Sinitsyn, L. N.
USE OF DRUGS TO PREVENT DISTURBANCES OF MYOCARDIAL CIRCULATION CAUSED BY STIMULATION OF THE CEREBRAL CORTEX. [1963] [14p] 26refs FASEB Manuscript no. S 204-3.
Order from OTS or SLA $1.60 63-23871

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 18-23.
Another trans. is available from OTS $2.75 in 63-21331, JPRS-18152, 18 Mar 63 [142]p.

DESCRIPTORS: Drugs, *Vasoactive agents, *Blood circulation, *Cardiac muscle, Stimulation, *Cerebral cortex, Angina pectoris, Ethers, Nitroglycerin, Hexonium, Pentothal sodium, Nitroglycerin

An effort was made to determine whether electrical stimulation of the orbital surface of the cerebral cortex affected the tone of the coronary vessels, and if so, whether the effects of this stimulation could be prevented by means of drugs. For this purpose drugs were used whose mechanism of action suggested that they might block such effects. Narcotics (thiopental, ether), ganglion-blocking agents (hexonium, TEA), and spasmolytics (papaverine, nitroglycerin) were used. Experiments were carried out on cats. The results demonstrated that constriction of the coronary vessels develops during stimulation of the cerebral cortex. This fact is experimental confirmation of the possibility that the central nervous system may take part in the onset of coronary insufficiency. The results also showed that the cortically induced disturbance of myocardial circulation may be prevented at different levels by means of drugs. This type of effect is shown by ether, thiopental hexamethonium, tetamon and papaverine. Ether and thiopental evidently block the effect because of their central action. Ganglioplegic drugs (tetamon and hexamethonium) block instead by a disturbance of ganglionic transmission. Papaverine evidently produces its effect as a result of its vasodilator properties. Nitroglycerin had no preventive effect. (Extracted)

Kochmann, M.
INHALATION ANESTHETICS. [1963] 8p (fig omitted)
Order from SLA $1.10 63-20420

Partial trans. (p. 235-241) of [Handbuch der Experimentellen Pharmakologie (Germany) [1923] v. 1, p. 133-261.

DESCRIPTORS: *Anesthetics, Ethers, Drugs,

Kokanbaeva, R. F.
THE CLINICAL CHARACTERISTICS OF THE EFFECT OF AMINAZINE AND SERPASIL ON THE VEGETATIVE NERVOUS SYSTEM (Klinicheskaya Kharakteristika Vliyaniya Aminazina i Serpazila na Vegetativnuyu Nervnuyu Sistemu) tr. by Wanda M. Feeley. Aug 61, 8p. (refs. omitted). PSC no. 60-850.
Order from OTS or SLA $1.10 63-19118

Trans. of Sovetskaya Meditsina (USSR) 1960, v. 24 [no. 3] p. 114-119.

DESCRIPTORS: *Chlorpromazine, *Reserpine, Drugs, *Psychotropic agents, Reflexes, *Autonomic nervous system, Psychoses.

Serpasil (Reserpine) was administered to 40 schizophrenic patients. Aminazine (Chlorpromazine) was given to 50 schizophrenics and 10 manic-depressive patients. The effect of the drugs on the autonomic nervous system was studied in each patient. The indices used included pulse rate, blood pressure, respiration, pupillary dilation and perspiration. The reactivity of the following reflexes were studied: Aschner's, orbital, palatal cardiac parasympathetic, palatal cardiac sympathetic, Chermak's solar, Rubino's and orthoclinostatic. Schizophrenic patients who received aminazine manifested 3 stages of its effect. The first showed intensified parasympathetic changes. The second showed slightly pronounced sympathetic changes. The third stage showed fluctuations in either direction. The first and third stages of these changes were present with serpasil therapy, but the second stage did not occur. The second stage changes with aminazine therapy coincided with the onset of psychic improvement. The similar stages of vegetative changes under serapasil therapy had no parallel relation to psychic improvement.

Kroneberg, G. and Stoepel, K.
AN EFFECT OF GUANETHIDINE ON SKELETAL MUSCLES AND SPINAL REFLEXES (Über eine Wirkung von Guanethidin auf Skeletmuskulatur und Rückenmarksreflexe). [May 63] 12p. 13 refs.
Order from SLA $1.60 63-18734

Trans. of Naunyn-Schmiedeberg's Arch[iv für] Exp[erimentelle] Path[ologie] u[nd] Pharmak[ologie] (West Germany) 1962, v. 243, p. 36-43.

DESCRIPTORS: *Guanethidine, *Muscles, *Reflexes, *Spinal cord, Drugs, Neuromuscular transmission, Vasoactive agents.

In spinal cats Guanethidine inhibits polysynaptic and monsynaptic reflexes. The inhibition reaches its maximum after 10-20 min. after i.v., injection of Guanethidine and lasts for several hours, whereas the simultaneously registered contraction of the M. gastrocnemius on the other leg, evoked by stimulation of the peripheral stump of the N. ischiadicus, is depressed transiently and to a smaller extent. After intraarterial injection of Guanethidine into the A. femoralis, the muscle contractions elicited by nervous or reflex stimulation are inhibited at once and to the same extent. The effect of nervous stimulation is inhibited by smaller doses of Guanethidine injected intraarterially than that of direct stimulation of the muscle. This difference in response cannot be observed significantly in the isolated diaphragm preparation of rats. In curarized spinal cats the contractions of the directly stimulated muscle are still depressed by guanethidine. The results are discussed with respect to the sites of action of Guanethidine. (Author)

Litvinenko, S. N.
RAPID METHOD FOR BIOAUTOGRAPHIC DEVELOPMENT OF PAPER CHROMATOGRAMS IN WORK WITH ANTIBIOTICS. [1963] [6p] 3refs FASEB Manuscript no. S 224-3.
Order from OTS or SLA $1.10 63-23827

Trans. of Laboratornoe Delo (USSR) 1962, v. 8, no. 10, p. 49-51.

DESCRIPTORS: *Paper chromatography, Drugs, *Antibiotics, *Biological assay, Photographic recording media, Biological stains.

Markova, G. A.
THE EFFECT OF DRUGS ON THE BLOOD SUPPLY OF THE HEART IN ACUTE DISTURBANCES OF THE CORONARY CIRCULATION. [1963] [9p] 10refs FASEB Manuscript no. S 207-3.
Order from OTS or SLA $1.10 63-23873

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 33-35.
Another trans. is available from OTS $2.75 in 63-21331, JPRS-18152, 18 Mar 63 [142]p.

DESCRIPTORS: Drugs, *Vasoactive agents, Heart, *Blood circulation, *Nitroglycerin, *Phenothiazines, *Angina pectoris.

A study was made of the effect of drugs (papaverine, nitroglycerin, chloracizine and pentamine) on certain indices of the blood supply of the heart during acute disturbance of the coronary circulation, caused by ligation of the descending branch of the left coronary artery. In acute experiments, conducted on cats, the principle criterion used to judge the state of the blood supply of the heart was the rate of coronary blood flow, estimated by measuring the outflow of blood from the coronary sinus by catheterization for a known time. In chronic experiments, conducted on dogs, the changes in the minute volume and work of the heart under the influence of these drugs were determined. Of the drugs tested chloracizine was found most effective when the coronary circulation was disturbed. Papaverine also improved the blood supply to the heart although to a lesser degree than chloracizine. Nitroglycerin was least effective and pentamine did not improve the blood supply of the heart after experimental disturbance. (Extracted)

Meier, R., Schuler, W., and Desaulles, P.
THE MECHANISM OF THE INHIBITION OF CONNECTIVE TISSUE GROWTH BY CORTISONE. [1963] 7p. (figs. omitted) 9 refs.
Order from SLA $1.10 63-18484

Trans. of Experientia (Switzerland) 1950, v. 6, no. 12, p. 469-471.
Another trans. is available from SLA mi$1.80, ph$1.80 as 60-10381, 9 Nov 54, 4p.

DESCRIPTORS: Inhibition, *Connective tissues, Drugs, *Corticosteroids, *Healing

The growth of granuloma following systemic administration of cortisone was compared with the growth following application of cortisone at the site of implantation of a foreign body. Cotton tampons were implanted subcutaneously in rats. One group received daily doses of cortisone. Another group had similar tampons implanted bilaterally, one of which was impregnated with cortisone. The granuloma resulting from the foreign body implants in the absence of cortisone were composed of undifferentiated connective tissue giant cells, with a relatively large number of mitotic cells. Daily doses of cortisone inhibited these connective tissue cells proliferation. The degree of inhibition paralleled the dosage of drug. In the bilateral implants the connective tissue proliferation was greatly inhibited on the side of the impregnated implant. Similar concentrations of cortisone administered either locally or systemically exert an inhibitory effect on connective tissue proliferation. This inhibitory effect of cortisone on connective tissue appears to be identical in systemic or local administration.

Messineva, N. A., Karaseva, E. V. and others.
INVESTIGATION OF THE COAGULATING BLOOD SYSTEM AFTER THE INFUSION OF PROTEIN BLOOD SUBSTITUTE BK-8 IN EXPERIMENT DURING SURGERY. 6 Aug 63, 6p. 3refs. JPRS: 20523.
Order from OTS $0.50 63-31471

Trans. of Problem Gematologii i Perelivaniya Krovi (USSR) 1963, v. 8, no. 6, p. 45-48.

DESCRIPTORS: *Blood coagulation, Drugs, *Plasma substitutes, Surgery, *Hemorrhage,

Doses of 20, 10, and 5 ml/kg of BK-8 plasma substitute were given by drip infusion to dogs during gastric resection. A control group received regular plasma. Venous clotting, plasma recalcification time, heparin tolerance, the prothrombin complex, the retraction of the blood clot, and the number of thrombocytes in smears were used as indices for analyzing the effects of BK-8 on the blood coagulating system. During the first 24 hours, after doses of 20 ml/kg, the blood clotting time and plasma recalcification time were prolonged, accompanied by a simultaneous reduction of tolerance to heparin with an increase in free heparin. The number of thrombocytes did not change. All indices studied returned to their original levels after 2 days, except the heparin tolerance. This was still lowered after 48 hours. Smaller doses of the drug produced inhibition of the blood coagulation. Satistically these decreases were not real differences. Inhibition of blood clotting after BK-8 infusion appears to be due to the increased heparin in the blood. BK-8 has a transitory, stimulating effect on heparin secretion by the liver. The deterioration of blood clot retraction in the absence of an increase in thrombocytes may be due to an increase of fibrinolytic activity produced by BK-8.

Obara, Giro.
STUDIES ON THE BIOLOGICAL ACTION OF LEAD TETRAETHYL. I. THE MINIMAL LETHAL DOSE OF LEAD TETRAETHYL AND THE EFFECT OF VITAMINS B_1 AND C AS WELL AS OF SODIUM THIOSULFATE ON THE DURATION OF LIFE AND POISONED ANIMALS. [1963] 32p 8refs
Order from SLA $3.60 63-18813

Trans. of Tohoku Journal of Experimental Medicine (Japan) 1944, v. 46, p. 295-322.

DESCRIPTORS: Poisoning, *Metal poisoning, *Lead compounds, *Tolerances (Physiology) *Vitamin B complex, *Ascorbic acid, Ethyl radicals, Thiosulfates, Sodium compounds.

The subcutaneous administration of tetraethyllead causes the gradual depletion of liver glycogen in the initial stages of the intoxication. Depending with the progress of poisoning, the glycogen of the liver and of the muscle becomes completely destroyed. The simultaneous administration of vitamins B_1 or C, or sodium thiosulfate more or less prevents the decomposition of glycogen. The capacity of the liver as well as of the muscle to regenerate glycogen from infused glucose is approximately halved by the subcutaneous administration of tetraethyllead. The injurious effect of the lead compound in specific dosage is completely removed by the simultaneous administration of vitamins B_1 and C and sodium thiosulfate. (Author)

Penati, F. and Ruata, R.
THE ELIMINATION OF COBALT IN THE URINE FOLLOWING ORAL ADMINISTRATION TO MAN. [1963] 10p 14refs
Order from SLA $1.10 63-18762

Trans. of Rassegna di Medicina Industriale (Italy) 1940, v. 11, p. 372-380.

DESCRIPTORS: *Excretion, Urine, *Cobalt, Man, Tolerances (Physiology), Metal poisoning.

Quadbeck, G.
ETHYLENE GLYCOL AND RELATED COMPOUNDS AS PHARMACEUTICAL SOLVENTS. [1963] 1p
Order from SLA $1.10 63-20165

Trans. of article from unidentified source, Heidelberg, n.d.

DESCRIPTORS: *Ethylenes, *Glycols, Drugs, Solvents.

Roholm, Kaj.
FLUORINE AND FLUORINE COMPOUNDS: MECHANISM OF THE ACTION OF FLUORINE. [1963] 11p 46refs
Order from SLA $1.60 63-20100

Partial trans. (p. 54-61) of [Handbuch der Experimentellen Pharmakologie] (Germany). Supplement [1938] v. 7, p. 1-62.

DESCRIPTORS: Fluorine, *Fluorides, Poisons, *Poisoning, Toxicity

Schaaf, Fritz and Gross, Franz.
ANIMAL EXPERIMENTS IN THE STUDY OF THE EFFECT OF STEROIDS ON THE SKIN. [1963] 19p. (figs. omitted) 15 refs
Order from SLA $1.60 63-18470

Trans. of Archiv für Klinische und Experimentelle Dermatologie (West Germany) 1957, v. 205, no. 3, p. 312-320.
Another trans. is available from SLA as 58-1177, 11p.

DESCRIPTORS: *Steroids, *Skin, Animals, Drugs, Pregnandiols, *Carcinogenic agents,

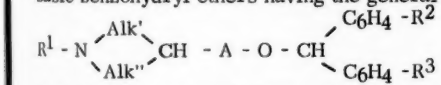
Pure Δ^5-pregnen-3 β-ol-20-one (pregnenolone) and its acetate, propionate and myristate, which have no sex-specific effects, when used at definite concentrations in salve-like emulsions, and applied repeatedly locally to the skin of the guinea pig, bring about a stimulation of cell growth and cell regeneration in the epidermis, with increase in the number of cells and a thickening of the cell layers forming the epidermis, as can also be demonstrated in a similar manner with corresponding application of sex-specific estradiol. (Author)

Schuler, W.
PROCESS FOR PREPARATION OF BASIC BENZOHYDRYL ETHERS. [1963] 7p
Order from OTS or SLA $1.10 63-20033

Trans. of German patent application C 4,791, 1/01, 10 Jun 51, by Chem. Fabrik Promonta, G. m. b. H.

DESCRIPTORS: Drugs, *Antihistaminics, Preparation, Benzene derivatives, Ethers, *Piperidine derivatives, *Prolines, *Ammonium compounds,

The invention involves a process for the preparation of basic benzohydryl ethers having the general formula:



in which R^1 is an alkyl group with not more than 4 carbons or a benzyl group, Alk' and Alk'' are straight or branched chain alkylene groups having not more than 3 carbons in a straight chain, A is the direct linkage between the nuclear CH and the ether oxygen or a straight or branched alkylene group with not more than 3 carbons, R^2 and R^3 are hydrogen or substituents like Cl, CH_3 or CH_3O, distinguished by the fact that basic alcohols are reacted with diphenyl methyl halides without the use of heat to produce quaternary ammonium salts and the latter after isolation are heated preferably in an inert solvent to rearrange them to basic benzohydryl ethers, these in turn being treated with inorganic acids or organic acid reacting compounds, in particular, 8-chlortheophyllin, to give salts or alternatively, they may be treated with alkyl or aralkyl halides or dimethyl sulfate at elevated temperatures to give quaternary ammonium salts. (Author)

Soldi.
SMOKING--HEALTH, LIKE MILLIONS OF SMOKERS, YOU ARE BOTHERED BY THIS PROBLEM. [1963] 5p (figs omitted).
Order from SLA $1.10 63-20067

Trans. from Paris-Match (France) 1963, 30 Mar.

DESCRIPTORS: *Smokes, *Cigarettes, Tobacco, Filters (Fluid), Toxicity, Inhibition.

A popular account of the advantages of a polyurethane cigarette filter by its inventor.

Souza, Eugenio de and Santana, Aleudo.
ON A NEW ANTIBIOTIC: COLISTAN OR COLIMYCIN (Sobre um Novo Antibiotico: Colistin ou Colimicina). [1963] 6p 25 refs
Order from SLA $1.10 63-18490

Trans. of [O] Hospital (Brazil) 1961, v. 59 [no. 1] p. 133-138.

DESCRIPTORS: Antibiotics, *Colimycin, Infections, *Urinary system, Drugs,

Twelve cases of various urinary infections were observed, 3 of which were eliminated at the outset as renal tuberculosis was involved. In almost all cases the infection was caused by E. coli, cases also existing of combination of paracoli and Proteus organisms. The duration of treatment was 10 days on an average. Although the number of cases was small, it was concluded that the antibiotic was of unquestionable value in the therapy of urinary infections produced by coli organisms and combined enterobacteria. (Author)

Ul'yanova, O. V.
THE ANTI-ARRHYTHMIC ACTIVITY OF CHLORACISINE. [1963] [11]p. 11 refs. FASEB Manuscript no. S 212-3.
Order from OTS or SLA $1.60 63-23830

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1963, v. 18, no. 1, p. 64-68.
Another trans. is available from OTS $2.75 in 63-21331, JPRS-18152, 18 Mar 63 [142]p.

DESCRIPTORS: Drugs, *Arrhythmia, *Phenothiazines, Cardiac glycosides, *Cardioactive agents, Vasoactive agents

Chloracisine shows greater activity and its action is more prolonged than quinidine, but its side-effects are much less marked. It is suggested that the anti-arrhythmic action shown experimentally by chloracisine may widen the indication for its use in clinical medicine in the treatment of ventricular extrasystoles and arrhythmias associated with increased excitability of the sinoatrial node. (Author)

Werner, M. and Meier, A. L.
STUDIES OF PROTEIN METABOLISM IN PATIENTS WITH GASTRIC RESECTION: INFLUENCE OF HIGH-PROTEIN DIET AND AN ANABOLIC STEROID (Untersuchungen des Eiwessstoffwechsels bei Magenresezierten. Einfluss Eiweissreicher Ernährung und eines Anabolen Steroids). [1963] 21p. 70 refs.
Order from SLA $2.60 63-18735

Trans. of Schweiz[erische] Med[izinische] W[ochen]-schr[ift] 1962, v. 92, 2 June, p. 684-691.

DESCRIPTORS: *Proteins, Metabolism, *Surgery, *Stomach, Diet, *Dianabol, Drugs,

Nitrogen balances, changes in body weight and changes in the concentration of non-protein nitrogen, blood urea and serum proteins were studied in 15 normal patients after partial gastrectomy. In all cases the postoperative N balance remained negative for about 10 days. Maximum N excretion occurred during the 3rd to the 5th day. A high protein diet or methandrostenolone, an anabolic steroid, diminished the N loss from the body. After operation there is a temporary, statistically significant increase of NPN in serum, caused by BUN elevation. The concentration of these substances reaches its maximum on the 6th day; by the 12th day it is normal. From the 3rd to the 15th postoperative day, serum total protein was unchanged as compared with preoperative values. Albumin showed a constant decrease during this period, α-globulin a temporary increase. (Author)

Weyrauch, F. and Litzner, St.
INVESTIGATIONS OF THE EXCRETION OF LEAD BY THE KIDNEYS AND ITS RESPONSE TO CERTAIN FORMS OF DIET AND MEDICATION, IN HUMAN BEINGS. PT. II. CONCERNING THE SO-CALLED NORMAL LEAD IN THE URINE. [1963] 9p 10refs
Order from SLA $1.10 63-20290

Trans. of Arch[iv] f[ür Gewerbepathologie und] Gewerbehyg[iene] (Germany) 1932, v. 3, p. 15-[22].

DESCRIPTORS: Excretion, *Lead, Kidneys, Diet, Drugs.

Radiobiology

RADIOBIOLOGY, 1962, VOL. 2, NO. 6. 31 May 63, 211p
Order from OTS $3.00 AEC-tr-5433

Trans. of Radiobiologiya (USSR) 1962, v. 2, no. 6, p. 801-952.

DESCRIPTORS: *Radiobiology, *Luminescence, Liver, *Radiation effects, *Valine, *Ciliata, *Tissue cultures, Gamma rays, *Yeasts, Genetics, Regeneration, *Blood proteins, Plutonium, Cesium, *Radiological contamination, Animals, *Vitamin B complex, Radiation sickness, Hemorrhage, *Hemopoietic system, *Bone marrow, Gastrointestinal system, Ovaries, *Anomalies, Transplantation, *Reflexes, X-rays, *Electrocardiography, *Epinephrine, Embryology, *Epithelium, Intestines, *Radioprotective agents, Mammary glands, *Indoles, *Methionine, Radioactive isotopes, *Spleen, Plants (Botany), Ionization, *Water supplies, Crustacea, Absorption (Biological), Radiological dosage,

Contents:

Very weak luminescence (450-700 mμ) of living and homogenized liver in normal state and after exposure to ionizing radiation, by A. I. Polivoda and E. N. Sekomova
Oxidation of thymine and valine and radiation injury to infusoria, by A. S. Popov
Change in antioxidative activity of strain Hep-2 tissue culture after external gamma-irradiation, by B. V. Leonov
Dependence of effectiveness of gamma-irradiation of diploid and haploid yeasts on conditions of postradiation cultivation, by V. I. Korogodin and E. M. Karabaev
Recovery of yeasts at early times after irradiation, by A. Kh. Tambiev
Blood serum proteins of rabbits and dogs affected by plutonium, by N. I. Elkina
Level of contamination and features of distribution of radiocesium in organism of man and farm animals in natural conditions, by L. G. Shakhidzhanyan
Distribution of radioactive vitamin B_{12} in plasma and organs of rats in acute radiation sickness, by L. L. Shepshelevich and L. S. Rogacheva
Effect of prolonged exposure to Co^{60} on hemopoiesis stimulated by bleeding, by A. D. Pushnitsina
Study of the blood coagulation system of transplantation of bone marrow in acute radiation sickness, by M. Ya. Lagutina
Disturbance and recovery of the activity of the digestive system in experimental radiation sickness, by M. F. Nesterin and K. V. Smirnov
Radiation damage to ovulation mechanism in the frog, by L. K. Kashchenko
Production of chimeras in guinea-pigs by homologous bone marrow, by D. R. Kaulen and others
Effect of chronic whole-body irradiations with Co^{60} on conditioned food reflexes in white rats, by E. S. Meizerov
Electrocardiographic analysis of reactivity of the heart to adrenalin in dogs which survived acute radiation sickness induced by whole-body X-irradiation, by V. I. Korchemkin and N. V. Raeva
Preparation processes after exposure to X-irradiation at the antenatal period of development, by N. A. Kalinina
Cytological analysis of changes induced by whole-body X-irradiation in epithelium of mucosa of the small intestine of the mouse, by I. B. Smirnova and I. M. Shapiro

Chemical prophylaxis of radiative injuries in various species of animals, by V. P. Korotkova and A. M. Stashkov

Peculiarities of the action of some protectors upon irradiation of isolated mammalian cells, by E. N. Tolkacheva and I. F. Bregadze

Protection against radiation with indole and its derivatives as well as with some other compounds in experiments in vivo, by P. G. Zherebchenko

Incorporation of methionine-S^{35} into proteins of bone marrow and spleen during acute radiation sickness and influence of bone marrow transplantation upon this process, by V. A. Revis

Effect of fast neutrons on the development of winter wheat PPG-186, by Hsu Ch'en-man and V. V. Khvostova

Morphological changes in plants induced by ionizing radiations, by N. M. Berezina and others

Accumulation of radiophosphorus by various components of water reservoirs, by D. Z. Gak

Accumulation of radioactive isotopes of calcium, yttrium and cerium by amphipoda, by N. N. Khmeleva

Determination of integral absorbed dose upon irradiation of animals with X-rays, by V. V. Kholin and others

Changes in reactivity of an irradiated organism, by V. Srb and Ya. Kvetina.

Chemyanov, G. G.
EFFECTS OF HOMOTRANSPLANTATION OF FRESH BONE MARROW ON RADIATION SICKNESS COMPLICATED BY CLOSED BONE FRACTURES. [1963] [10]p. 13 refs. FASEB manuscript no. S. 389-2.
Order from OTS or SLA $1.10 63-23892

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 5, p. 49-53.
Another trans. is available from OTS or SLA $2.60 in 62-32455, JPRS-14883, 17 Aug 62 [22]p.

DESCRIPTORS. *Transplantation, *Bone marrow, Bone, *Radiation sickness, *Fractures (Bone), Healing, Hemopoietic system.

Intraosseous bone-marrow transplantation causes no complications associated with the method of administration in radiation injury combined with bone fracture. Homologous bone marrow has a favorable effect on the hemopoietic system; it reduces the severity of the radiation sickness and increases the survival rate. A bony callus is formed and the marrow cavity restored more rapidly if homotransplantation of bone marrow is used. (Author)

Dubinin, N. P.
MOLECULAR GENETICS AND THE ACTION OF IRRADIATION ON HEREDITY: [SELECTED PARTS] 7 Aug 63, 37p Trans. A-1401.
Order from OTS or SLA $3.60 63-23687

Partial trans. of mono. Molekulyarnaya Genetika i Deistvie Izluchenii na Nasledstvennost', Moscow, 1963, 239p.

DESCRIPTORS: *Biochemical genetics, Genetics, *Radiation effects, Nucleic acids, Cells (Biology), Molecular structure,

Contents:
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Introduction
Conclusion

Klimov, P. K.
FUNCTIONAL CHANGES IN THE LYMPHATIC SYSTEM IN ACUTE RADIATION SICKNESS IN CONJUNCTION WITH TRAUMA TO THE BONES AND JOINTS. [1963] [8]p. 4refs. FASEB Manuscript no. S 388-2.
Order from OTS or SLA $1.10 63-23893
figs. available on loan from OTS

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 5, p. 45-48.

DESCRIPTORS: *Lymphatic system, *Radiation sickness, Bone, *Joints (Physiology), *Fractures (Bone), Wounds and injuries.

Kostenko, M. S.
EFFECTS OF SPECIFIC HEMOLYSINS ON PHAGOCYTOSIS IN PERITONEAL EXUDATE IN RADIATION SICKNESS. [1963] [7]p. 12refs. FASEB Manuscript no. S378-2.
Order from OTS or SLA $1.10 63-23896

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 7, p. 90-92.

DESCRIPTORS: *Hemolysins, *Phagocytosis, *Radiation sickness, Secretion, *Peritoneum.

Results are given on the phagocytic activity of leukocytes in peritoneal exudate in radiation sickness (in vivo experiments). Allowance was made in these experiments for the effect of hemolysins produced by injection of foreign erythrocytes. (Author)

Kurtsin, I. T.
EFFECTS OF IONIZING RADIATION ON THE DIGESTIVE SYSTEM. 1963, 332p
Order from American Elsevier Publishing Co., Inc., 52 Vanderbilt Ave., New York, 17, N. Y., $16.00

Trans. of mono. [Ioniziruyushchaya Radiatsiya i Pishchevarenie, Leningrad, 1961, 297p].

DESCRIPTORS: *Radiation effects, Radiation injuries, *Gastrointestinal system, Therapy.

Lebedinskii, A. V. and Nakhil'nitskaya, Z. N.
EFFECTS OF IONIZING RADIATION ON THE NERVOUS SYSTEM. 1963, 217p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Vliyanie Ionoziruyushchikh Izluchenii na Nervnuyu Sistemu, Moscow, 1960, 186p]

DESCRIPTORS: *Radiation effects, *Nervous system.

Makhonina, G. I., Molchanova, I. V., Subbotina, E. N., Timofeev-Resovskii, N. V., and Titlyanova, A. A.
ESSAI D'ANALYSE EXPÉRIMENTALE DE LA REPARTITION DES RADIOSOTOPES DANS LES BIOGEOCENOSES NATURELLES (Opyt Eksperimental'nogo Issledovaniya Raspredeleniya Radioizotopov v Estestvennykh Biogeotsenozakh) [Radioisotope Distribution in Natural Biogeocenoses]. 26 Mar 63 [14p] (foreign text included) 10refs CEA Trans. no. R 1698.
Order from OTS or SLA $1.60 63-24006

Trans. in French of Akademiya Nauk SSSR. Doklady, 1960, v. 133, no. 2, p. 484-487.

DESCRIPTORS: *Radioactive isotopes, Biology, Plants (Botany), Soils, Chemical elements, Distribution, Ecology, Tracer studies, Geochemistry.

Mallabyu, G. A.
THE BIOLOGICAL INTERACTION BETWEEN ROENTGEN AND INFRARED RAYS. [1963] [6]p. 5 refs.
FASEB manuscript no. S424-2.
Order from OTS or SLA $1.10 63-23836

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 4, p. 64-66.
Another trans. is available from OTS or SLA $3.60 in 62-25538, JPRS-14299, 27 June 62 [37]p.

DESCRIPTORS: *X rays, *Infrared radiation, Radiation effects, Radiation injuries, Skin, Rabbits

It is shown that the application of infrared rays immediately after irradiation with roentgen rays intensifies the radiation injury to the skin. The sooner after the roentgen-ray irradiation the infrared rays are applied, the more marked their intensifying action. (Author)

Melching, H.-J., Jaques, R., and Ladner, H.-A.
STUDIES ON BIOLOGICAL RADIATION PROTECTION. REPT. 43. DEPENDENCE ON SEROTONIN OF THE RADIATION-PROTECTIVE EFFECT OF RESERPINE (Untersuchungen über einen Biologischen Strahlenschutz. XLIII. Mitteilung. Zur Frage der Serotoninabhängigkiet des Strahlenschutzeffektes von Reserpin). [Feb 62] [15]p. 20 refs.
Order from SLA $1.60 63-18719

Trans. of Strahlentherapie (West Germany) 1961, v. 116, Oct, p. 251-218.

DESCRIPTORS: *Radioprotective agents, *Reserpine, *Serotonin, Radiation effects, Drugs, Radiation sickness.

It is shown that the protective effect exerted by either reserpine or serotonin in mice receiving lethal x-ray irradiation may be augmented or antagonized by substances of varying pharmacological character. (Author) (See also 59-15052)

Skulme, K. A.
PROPER FEEDING OF TUMOR PATIENTS DURING RADIATION TREATMENT [AND] TABLE OF CONTENTS. 24 Oct 63, 78p 156refs JPRS: 21588.
Order from OTS $2.00 63-31999

Trans. of [Akademiya Nauk Latviiskoi SSR, Riga. Institut Eksperimental'noi Meditsiny. Trudy] 1962, v. 28, no. 4, p. 171-243, 255-256.

DESCRIPTORS: *Tumors, *Radiotherapy, *Nutrition, Feeding, Radiation sickness, Radiation effects.

Topics include: the role of nutrition in prevention of radiation sickness; protein reserves of the body under conditions of a radiation effect on it; vitamin C metabolism under conditions of the effect of radiation on the body; experience in the clinical study of the secretory and excretory function of the stomach during radiation treatment of tumor patients; some biochemical processes in the formation of hydrochloric acid under conditions of the radiation effect on the body; and experience in the clinical study of the motor activity of the gastrointestinal tract under conditions of a radiation effect on the body.

Sokolov, V. V., Soloveva, V. A., and Gribova, I. A.
COMPARISON OF MARROW HEMOPOIESIS IN THE INITIAL STAGES OF CHRONIC X-IRRADIATION AND INTOXICATION WITH BENZENE. [1963] [4]p.
FASEB Manuscript no. S379-2.
Order from OTS or SLA $1.10 63-23895

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 7, p. 92-93.

DESCRIPTORS: *Bone marrow, *Hemopoietic system, *Radiation effects, X-rays, Toxicity, *Benzenes, Poisoning.

Sviridov, N. K. and Parfenova, E. G.
SOME PROTECTIVE AND RESTORATIVE REACTIONS OF THE ORGANISM IN RADIATION SICKNESS. [1963] [5]p. FASEB manuscript no. S 377-2.
Order from OTS or SLA $1.10 63-23897

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 7, p. 89-90.
Another trans. is available from OTS or SLA $4.60 in 62-33314, JPRS-15514, 1 Oct 62 [45]p.

DESCRIPTORS: *Regeneration, *Radiation sickness, Radioprotective agents, Reticuloendothelial system, Hemopoietic system.

The investigation was concerned with the activity of the reticuloendothelial system, circulation time, and the restoration of the normal blood picture in acute radiation sickness, with special attention to the effects of experimental chemotherapy in acute radiation sickness in dogs. The results indicate that the chemotherapy employed increased the survival rate, improved the course of the sickness, and accelerated restoration of the bone marrow and blood elements. The reaction of the reticuloendothelial system reflects unspecific stimulation of the active mesenchyma in the treatment of acute radiation sickness. (Author)

Uspenskaya, M. S.
OVERALL EXCRETION OF RESPIRATORY STIMULANTS AND DESOXYCYTIDINE IN THE URINE OF RATS EXPOSED TO STRONTIUM-90. [1963] [7]p. 8 refs.
Order from OTS or SLA $1.10 63-19691

Trans. of Radiobiologiya (USSR) 1961, v. 1, no. 5, p. 663-667.
Another trans. is available from OTS $3.00 in AEC-tr-5426, Mar 63, 236p.

DESCRIPTORS: *Excretion, Urine, Respiration, Stimulation, Radioactive isotopes, *Strontium, Rats, *Tracer studies, *Nucleic acids, Radiation effects.

No increase in the excretion of substances containing desoxyribose (respiratory stimulants) was found in the urine of rats subcutaneously injected with 0.5 microcuries of strontium-90 per kg of body weight 24 hours after introduction of the radioactive substance. Excretion of desoxycytidine in the urine of rats poisoned with 2 microcuries of strontium-90 per kg of body weight was increased 50%, 45%, and 67% by the 3rd, 6th, and 9th days, respectively. Only by the 6th day of radiation illness did the total excretion of respiratory stimulants in the urine of these rats display a tendency to rise, and this rise was definitely established by the 9th day. When 0.5 microcurie of strontium-90 was injected into rats per kg of their weight, excretion of respiratory stimulants in their urine was 25% and 33% above the norm on the 39th and 83rd days. Diuresis decreased in the rats during the first few days after introduction of doses of 0.5 or 2 microcuries of strontium-90 per kg of body weight. Diuresis was increased at the height of the radiation illness. No definite correlation was found between the quantity of urine excreted daily by the rats and its content of respiratory stimulants and desoxycytidine. (Author)

Voityuk, V. M.
CERTAIN FEATURES OF THE MECHANISM OF LEUKOPENIA IN ACUTE RADIATION SHOCK. [1963] [6]p. FASEB manuscript no. S 52-3.
Order from OTS or SLA $1.10 63-23859

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 11, p. 82-83.

DESCRIPTORS: *Leukopenia, *Radiation sickness, *Shock (Pathology), Hemopoietic system.

It is shown that the lower the dose of radiation received, the greater the relative importance of redistribution in the development of leukopenia. The larger the dose of radiation, the sooner the redistrubutive, functional phase of leukopenia gives way to substantial organic changes in the leukocytes of the blood and bone marrow. The phasic nature of the changes in leukopoiesis during acute radiation shock require application of suitable therapeutic measures: anti-shock measures must be taken during the first few hours after irradiation; subsequently, transfusions of leukocytes and erythrocytes, leukopoietic stimulators, and vitamin and hormone therapy are required. (Author)

Zubovskii, G. A. and Tsimerman, G. S.
TREATMENT OF OTOSCLEROSIS WITH RADIOPHOSPHORUS. [1963] [10]p. 5refs.
FASEB Manuscript no. S 385-2.
Order from OTS or SLA $1.10 63-23894

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 5, p. 27-31.

DESCRIPTORS: *Deafness, Bone, Ear, *Hearing, Radioactive isotopes, *Phosphorus, *Radiotherapy, Radiation effects, Otorhinolaryngology.

Zoology

Amosova, I. S.
ON THE GONOTROPHIC RELATIONS WITHIN THE GENUS CULICOIDES (DIPTERA, HELEIDAE) tr. by R. Ericson. 3 Aug 60, 9p. (figs. omitted).
Order from OTS or SLA $1.10 63-23593

Trans. of #Ent[omologicheskoe] Obozr[enie] (USSR) 1959, v. 38, no. 4, p. 774-789.

DESCRIPTORS: *Culicidae, Diptera, Reproduction, Morphology, *Rhythm (Biology), Hormones, *Growth substances, Gonads, Arthropods

Topics include: Phases of development of the follicles of the gonotrophic cycle of Culicoides obsoletiformis Amosova; phases of digestion, sensu Sella, of the gonotrophic cycle of C. obsoletiformis; normal gonotrophic cycle of C. obsoletiformis; role of supplementary carbohydrate feeding; gonotrophic cycle of C. obsoletiformis when taking an incomplete portion of blood; normal gonotrphic cycle in C. pulicaris L.; and, the possibility of the autogenic development of eggs in C. dendrophilus Amosova.

Andryashev, A. P.
FAMILIES OF FISHES NEW TO THE ANTARCTIC. COMMUNIQUE 3: PELAGIC YOUNG OF FLATFISH (PISCES, BOTHIDAE) OFF THE ANTARCTIC COAST, tr. by Laurence Penny. [1963] [7]p. 7 refs.
Order from OTS or SLA $1.10 63-23140

Trans. of Zoologicheskii Zhurnal (USSR) 1960, v. 39, no. 7, p. 1056-1061.

DESCRIPTORS: *Fishes, Taxonomy, *Antarctic regions, Marine biology.

Achiropsetta slavae sp. n is characterized and its taxonomic position is discussed. Possible reasons are given for the discovery of specimens of this pelagic flatfish fry near the coast of Antarctica in view of the fact that the fish possess adaptations characteristic of life in the deeper layers of the sea.

Bekker-Migdisova, E. E.
PALEOZOIC HOMOPTERA OF THE USSR AND PROBLEMS OF THEIR PHYLOGENY. [1963] [18]p. 34 refs.
Order from OTS or SLA $1.60 63-19264

Trans. of Paleontologicheskii Zhurnal (USSR) 1960, no. 3, p. 28-42.

DESCRIPTORS: Paleontology, *Homoptera, Insects, Taxonomy, *Evolution, Ecology, Adaptation (Physiology), *Genetics.

An historical investigation of the development of the Homoptera discloses that the origin of the Homoptera is the result of a new trait in the blattoid ancestors with rasping maxillae. This new trait, a singular type of exchange with the environment, specifically, the sucking of plant sap, entailed the development of a new form. The entire body of the insect demanded fundamental reorganization, which was first of all manifested in the restructuring of the mouth-parts from mandibulate to suctorial. The primary cause for this evolution was the change in the conditions of existence, that is, a change in the climate, the appearance of a new flora, etc. (Extracted)

Burmakin, E. V.
PROSPECTS FOR THE ACCLIMATIZATION OF FRESH WATER FISH IN THE USSR. 30 Aug 63, 11p 9refs JPRS: 20863.
Order from OTS $0.50 63-31649

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 6, p. 801-808.

DESCRIPTORS: *Fishes, *Acclimatization, Adaptation (Physiology), Ecology,

The adaptability of the species to a change in their aquatic media is a vital consideration in species selection. Environmental conditions which must be considered in transplantation to new media are the temperature ranges, chemistry, rate of flow, the fluctuations of the sea level, and the spawning substratum. The effects of the aborigine fish on the survival of the transplanted species is an unpredictable but determining factor in the survival of the transplanted species.

Goroshchenko, Yu. L.
CHROMOSOME COMPLEX OF CARIOS VESPERTILIONIS LATR. (IXODOIDEA, ARGASIDAE) WITH RESPECT TO THE PROBLEM OF ITS GENERIC CLASSIFICATION (Khromosomnii Kompleks Carios Vespertilionis Latr. (Ixodoidea, Argasidae) v Svyazi s Voprosom o Ego Rodovoi Prinadlezhnosti) tr. by J. Hardy. [1963] [12]p. (foreign text included) 10 refs. [CSIRO] Trans. no. 6211.
Order from OTS or SLA $1.60 63-23405

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1962, v. 144, no. 3, p. 665-668.

DESCRIPTORS: *Ticks, *Chromosomes, *Taxonomy, Genetics.

On the basis of a chromosomal investigation, it is established that vespertilionis belongs to the independent genus Carios rather than to the genus Argas.

Karzinkin, G. S.
BIOLOGICAL PRODUCTIVITY OF WATER BODIES. 1963, 350p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W. Washington, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Fishes, Fisheries, Food, Feeding, Production.

Markevich, A. P.
PARASITIC FAUNA OF FRESHWATER FISH OF THE UKRAINIAN S. S. R., tr. by N. Rafael. 1963, 388p 799refs
PL-480 Int.
Order from OTS $4.00 63-11130

Trans. of mono. Parazitofauna Presnovodnykh Ryb USSR, Kiev, 1951.

DESCRIPTORS: *Fishes, *Parasites, *Protozoa, *Annelida, *Platyhelminths, *Nematodes, *Mollusca, *Arthropods, Bibliographies.

Movchan, V. A. and Strel'nikov, S. I.
THE QUALITY OF CARP FINGERLING IN A ONE-YEAR CULTURE (Kachestvo Segoletkov Karpa pri Odnoletnei Kul'ture). 10 Sep 63, 9p. 5 refs. Trans. A-1404.
Order from OTS or SLA $1.10 63-23808

Trans. of Vestnik Sel'skokhozyaistvennoi Nauki (USSR) 1963 [v. 8] no. 4, p. 81-84.

DESCRIPTORS: *Cyprinidae, *Fishes, Growth, Anatomy, Feeding, Culture media.

Carp fingerling which were reared in thinned-out stock and fed plant and animal feed (1:9) differed insignificantly in content of water and dry matter in the body from the fingerlings raised on the same feed, but in a ratio of 9:1. Fingerlings of both groups, who received wheat middlings feed, differed sharply in content of dry matter of protein and fat. With an increase in the amount of fat in their bodies, the protein content decreased. Thinned-out stocking and feeding of fishes (plant and animal food in a 1:9 ratio) improved the utilization of natural pond food, increased the growth rate of carp in a period of high air and water temperature, raised the average weight of the fish by 37% in comparison with fingerlings reared by normal stocking, and their fry, thinned out and fed plant and animal foods in a 9:1 ratio. The low quantity of fat (25.79%) in fingerlings reared on a natural food base, may be raised by giving them food saturated with carbohydrates in the autumn months. This is also important for wintering fish which need a larger amount of fat reserves. (Author)

Musatov, A.
FIFTEEN YEARS OF FISH TRANSPLANTING ACTIVITY OF THE CENTRAL ACCLIMATIZATION STATION: NEW ABODE UNDER THE SIGN "FLYING FISH" 23 Oct 63, 6p JPRS: 21556.
Order from OTS $0.50 63-31990

Trans. of Nauka i Zhizn' (USSR) 1963 [v. 30] no. 7, p. 78-82.

DESCRIPTORS: *Fishes, *Acclimatization.

Nikol'skii, A. M.
FAUNA OF RUSSIA AND ADJACENT COUNTRIES: REPTILES, VOL. I: CHELONIA AND SAURIA, tr. by L. and E. Kochva. 1963, 352p refs PL-480 Smi.
Order from OTS $3.75 63-11162

Trans. of mono. Fauna Rossii i Sopredel'nykh Stran: Presmykayushchiesya, v. 1: Chelonya i Saurya, Petrograd, 1915 [557p].

DESCRIPTORS: Animals, *Taxonomy, *Reptiles.

Sviridov, G. G.
THE USE OF RADIOACTIVE ISOTOPES IN THE STUDY OF SOME PROBLEMS OF FLEA ECOLOGY. PT. 2. THE CONTACT OF ANIMALS AND INTENSITY OF THE EXCHANGE OF ECTOPARASITES IN A RHOMBOMYS OPIMUS POPULATION. 30 Aug 63, 4p JPRS: 20864.
Order from OTS $0.50 63-31650

Trans. of Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 6, p. 947-949.

DESCRIPTORS: *Siphonaptera, Parasites, *Rodents, *Tracer studies, Ecology.

The intensity, direction and range of dispersion of fleas by rodents was studied by labeling 2000 fleas and 5 Rhombomys opimus with radioactive suflur. The fleas were released into the central burrow of a 250 meter square area. The rodents were released into an equivalent area. The two areas were separated by 250 km. The migrating fleas were collected 9 and 32 days after the release of the fleas and rodents. The rodents were removed from the burros at the end of 24 hours. Nine burrows in the area where the rodents were released were found infested with labeled fleas. In the other area, two burrows were infested. The capture of the labeled rodents sharply reduced the spread of ectoparasites. Only one additional burrow was found infested in the second count. The contact index of labeled fleas in the area of the labeled rodents increased between the two counts, from 6.3 to 8.4. It increased from 2.5 to 3.5 in the area in which the labeled fleas were released. The greatest spread of fleas from their host occurred in a 100 meter radius. One burrow over 200 km from the sight of release was found infested. The labeled fleas in the area of the tagged rodents had increased from 43.9% to 74% between the two counts. In the area of the tagged fleas, the percentage dropped from 85.3 to 44% between the 2 counts. (See also 63-31306).

CHEMISTRY

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 325 (CHEMISTRY SERIES). 16 Oct 63, 21p JPRS: 21471.
Order from OTS $0.75 63-31947

Consists of abstracts of articles from selected scientific and technical journals of East Germany.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Geochemistry, *Silicon compounds, Inorganic substances, *Minerals, Chemical analysis, *Rare earth compounds, *Catalysts, Chromatographic analysis, Electrochemistry, Crystal lattices, Physical chemistry.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 339 (CHEMISTRY SERIES). 22 Oct 63, 13p JPRS: 21549.
Order from OTS $0.50 63-31986

Consists of abstracts of articles from selected scientific and technical journals of East Germany and Rumania.

DESCRIPTORS: *Abstracts, Bibliographies, *Chemistry, Inorganic substances, Thermochemistry, *Catalysts, Crystals, Chemical analysis, Fertilizers, Metallurgy, *Plastics, Rubber, Drugs, *Complex compounds, Towers (Chemistry).

PROCESS FOR PREPARATION OF A PRODUCT CONTAINING CHOLINE CHLORIDE. [1963] [6p] 1ref
Order from OTS or SLA $1.10 63-20030

Trans. of French patent 1,307,421, delivered 17 Sep 62 by Commercial Solvents [Corp. (U.S.A.)].

DESCRIPTORS: *Cholines, *Chlorides, Powders, Preparation, Fillers, Calcium compounds, Silicates, Lignin, Sulfonates, Silicon compounds, Dioxides, Dehydration.

The invention concerns a process for preparation of a dry free flowing product containing a high concentration of choline chloride, consisting of forming a paste or suspension from an aqueous solution of choline chloride and a moisture absorbing powder and drying this paste by spray drying. (Author)

Kuss, E.
THE PATHS OF THE ECONOMY TOWARDS NEW TECHNOLOGY: DEVELOPMENT OF AMALGAM CHEMISTRY. [1963] 27p (figs omitted) 19refs
Order from SLA $2.60 63-18236

Trans. of Angew[andte] Chem[ie] (West Germany) 1950, v. 62, p. 519-526.

DESCRIPTORS: *Mercury alloys, Chemistry, *Zinc, Zinc compounds, Oxides, Production, *Electrochemistry, Electrolytic cells, Purification, Slags, Adhesion, *Chemical industry.

The items discussed are: production of zinc oxide via amalgam; production of zinc metal by thermal and electrolytic decomposition of the amalgam: the development of the so-called metal cell; systematic investigations of amalgams; cementation with amalgams; amalgam exchange reactions; technical difficulties of zinc amalgam electrolysis; planning of a large industrial set-up; new industrial applications of amalgam chemistry.

Stephen, H. and Stephen, T., eds.
SOLUBILITIES OF INORGANIC AND ORGANIC COMPOUNDS, VOL. 1, PT. 1: BINARY SYSTEMS. 1963, 964p
Order from PP $28.50

Trans. of unidentified mono., n.p., n.d.

DESCRIPTORS: *Organic compounds, *Inorganic substances, Solubility, Metalorganic compounds, Water, Tables, Chemistry, Chemical engineering,

Tupitsyn, I. F.
HEAVY HYDROGEN ISOTOPES OF DEUTERIUM AND TRITIUM. 17 Oct 63, 45p 63refs JPRS: 21487.
Order from OTS $1.25 63-31956

Trans. of mono. Tyazhelye Izotopy Vodoroda Deiterii i Tritii, Moscow, 1961, 38p.

DESCRIPTORS: *Deuterium, *Tritium, Isotopes, Hydrogen, Physical properties, Tracer studies, Labeled substances, *Radiochemistry, Nuclear industrial applications.

The brochure contains a description of the properties of the heavy isotopes of hydrogen -- deuterium and tritium -- and of the methods of obtaining and identifying them. Methods of preparing chemical compounds marked with isotopes of hydrogen are examined. The work contains several examples of the utilization of isotopes of hydrogen as marked atoms in science, industry and medicine. Brief information is given on safety measures when working with tritium. (Author)

Analytical Chemistry

Biedermann, W. and Schwarzenbach, G.
THE "COMPLEXOMETRIC" TITRATION OF ALKALINE EARTHS AND SOME OTHER METALS WITH ERIOCHROME BLACK T [Die Komplexometrische Titration der Erdalkalien und Einiger Anderer Metalle mit Eriochromschwarz T. Complexones. XI. [1963] 6p (figs omitted) 11refs
Order from SLA $1.10 63-20180

Trans. of Chimia (Switzerland) 1948, v. 2, p. 56-59. Another trans. is available from SLA as 57-01947, 12p.

DESCRIPTORS: *Sequestering agents, *Water supplies, *Magnesium, *Calcium, *Strontium, *Zinc, *Cadmium, *Manganese, *Mercury, *Volumetric analysis, *Chemical indicators,

Titration methods for the determination of Mg, Ca, Sr, Zn, Cd, Pb, Mn and Hg are described, in which Eriochrome Black T is used as indicator. These methods are simple and very accurate. The total hardness of water can be determined accurately to 0.2 degree in a few minutes. (Author)
(See also 63-20177)

Feigl, F. and Rajmann, E.
CONCERNING THE DETECTION OF FLUORINE WITH THE AID OF SPOT REACTIONS (Über den Nachweis von Fluor mit Hilfe von Tüpfelreaktionen). [1963] [7p] (foreign text included) 9refs
Order from SLA $1.10 63-20492

Trans. of Mikrochemie (Austria) 1932, v. 12, p. 133-136.

DESCRIPTORS: *Fluorine, *Colorimetric analysis, *Zirconium compounds, Chemical indicators.

Fürth, Otto and Herrmann, Heinz.
COLOR REACTIONS OF TARTARIC ACID, CITRIC ACID AND ACONITIC ACID. [1963] 13p 13refs
Order from SLA $1.60 63-20170

Trans. of Biochemische Zeitschrift (Germany) [1935] v. 280, p. 448-457.

DESCRIPTORS: *Chemical indicators, *Colorimetry, Carboxylic acids, Tartrates, *Citric acids, *Pyridines, *Acetic anhydrides, Crystallization, Solubility, *Biochemistry.

Gad, G. and Knetsch, Margret.
CHEMICAL ANALYSIS OF SMALL AMOUNTS OF WATER. [1 Aug 63] 6p
Order from SLA $1.10 63-20069

Trans. of Gesundheits-Ingenieur (West Germany) 1949, v. 70, p. 259-261.

DESCRIPTORS: *Water supplies, Chemical analysis, Hydrogen ion concentration, *Nitrates, *Nitrites, *Ammonia, *Carbonic acids, *Chlorides, *Oxygen, Permanganates, *Carbonates, Hardness, *Manganese, *Sanitary engineering.

Directions are given for testing the following conditions pH value; nitrate (NO_3^-); nitrite (NO_2^-); ammonia (NH_4^+); free carbonic acid (CO_2); chloride (CL^-); oxygen consumption (permanganate method); carbonate hardness or combined carbonic acid; manganese (Mn); and, iron (Fe).

Golaz, P., Girardet, A., and Regamey, R.
CONSIDERATIONS OF THE RECOVERY OF THE CONSTITUENTS OF CIGARET SMOKE. [1962] 29p. (figs. omitted) 17 refs.
Order from SLA $2.60 63-18466

Trans. of Mitt[eilungen] aus dem Gebiete der Lebensmitteluntersuchungen und Hygiene (Switzerland) 1959, v. 50, p. 18-39.
Another trans. is available from K-H $36.25 as K-H-9396-a [1962] 29p.

DESCRIPTORS: *Tobacco, *Cigarettes, Nicotine, *Smokes, Quantitative analysis, Separation.

A description is given of the recovery of the constituents of cigaret smoke by electrostatic precipitation in a simple apparatus functioning then like a separatory funnel. The exact volume of the air that passed through the cigarets was determined by means of a gas meter and proof is given of the necessity for it. With the aid of a kymograph, a study was made of the pressure-time curves in the course of a suction cycle corresponding to various modifications made on the apparatus provided with a cigaret, and they were compared with those obtained by smokers. Precise determination was made of the influence of the humidification of tobacco on the content of nicotine and tars in the smoke. An equation is proposed establishing the variation of the nicotine content as a function of the volume of each puff, and it is shown that in the comparison of one type of cigarets with filter with the same type without filter, the amount retained by the filter in per cent is independent of the puff volumes for a given type of cigarets. (Author)

Huditz, F. and Flaschka, H.
TITRATION OF CYANIDE ION WITH NICKEL SOLUTIONS. [1963] 5p 5 refs.
Order from SLA $1.10 63-18162

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1952 v. 136, p. 185-188.

DESCRIPTORS: *Nickel, *Cyanides, *Titration, Halides.

It was shown that cyanide can be titrated with great accuracy with nickel standard solutions using Murexide in the presence of halides and pseudohalides. The titration can be carried out on a macro as well as on a micro scale. Analyses for known values of 0.2 to 200 mg. cyanide are given. The loss of hydrocyanic acid by volitization can be avoided by starting with a known amount of standard nickel solution and back-titrating the excess with ethylenediamine tetraacetate standard solution. (Author)

Ivanova, K. S.
A RAPID METHOD OF DETERMINING THORIUM, RADIUM AND LEAD IN ACCESSORY MONAZITES, tr. by J. J. Cornish. [1963] [20]p. 4 refs. NP-tr-895; [DSIR NLL] M. 6328.
Order from OTS or SLA $1.60 63-23300

Trans. of #Radiokhimiya (USSR) 1961, v. 3, no. 3, p. 348-355.

DESCRIPTORS: Minerals, *Rare earth elements, *Lead, *Radium, *Thorium, Chemical analysis, Phosphates, *Geologic age determination.

A technique is recommended for the direct determination of lead from phosphate solutions of monazite on an LP - 55 polarograph. The possibility is noted of using orthophosphoric acid when decomposing monazites for establishing the different forms of uranium in the monazite. A technique was developed for separating out lead from phosphate solutions. A check was made of the accuracy of determining radium and thorium in monazites with the phosphate and sulphate methods of decomposing the mineral. A method is given of obtaining all the initial analytical data required for determining age from a single overall batch of monazite. (Author)

Kraft, G.
METHODS OF ELECTRIC INDICATION FOR COMPLEXOMETRIC TITRATIONS [Möglichkeiten fur die Elektrische Indikation Komplexometrischer Titrationen]. [1963] 8p. 14 refs.
Order from SLA $1.10 63-18166

Trans. of Zeitschrift für Anal[ytische] Chemie (West Germany) 1962, v. 186 [no. 1] p. 187-193.

DESCRIPTORS: *Electrochemistry, *Titration, *Sequestering agents, Complex compounds, Metal-organic compounds, Voltmeters, Potentiometers, Electrical conductance.

The paper shows the possibilities for electrical indication of complexometric titrations, discussing in detail the potentiometry, amperometry, voltammetry as well as the conductometry. It furthermore deals with a new indication system by means of a polarized oxide electrode and reports on the first results obtained when using this system for titrating Bi. (Author)

Neukom, H., Deuel, H., Heri, W. J., and Kündig, W.
CHROMATOGRAPHIC FRACTIONATION OF POLYSACCHARIDES ON CELLULOSE-ANION EXCHANGERS (Chromatographische Fraktionierung von Polysacchariden an Cellulose-Anionenaustauschern). [1963] [9p] (figs refs omitted)
Order from SLA $1.10 63-20269

Trans. of Helvetica Chimica Acta (Switzerland) 1960, v. 43 [no. 1] p. 64-71.
Another trans. is available from NRCC $1.00 as NRCC C-3490, NRCC TT-910, 1960, 14p.

DESCRIPTORS: *Polysaccharides, Fractionation, *Chromatographic analysis, *Ion exchange resins, Ethyl radicals, Amides, Cellulose, Solvents, Hydrogen ion concentration, Electrolytes, *Dextran, *Hemicellulose, Dibasic acids, *Serum-albumin, Beets, Flour,

Fractionation of polysaccharides on diethyl amino ethyl cellulose was found possible with the use of proper solvents and utilizing the differential attachment of polysaccharide molecules at different pH values and electrolyte concentrations. As much as 5 to 10 grams of polysaccharide preparation could be separated in large columns. Details are given of the procedure and results of experiments involving the fractionation of dextran, sugar beet araban, a mixture of dextran and araban, sugar beet pectic acid, a mixture of arabinoxylan from wheat flour and serum albumen, and water soluble flour polysaccharides.

Nicolarot, Paul and Chatelet, Claude.
ACTION OF ALKALIS ON CRUCIBLES OF ALLOYS OF PLATINUM AND GOLD. [1963] 5p
Order from SLA $1.10 63-20161

Trans. of [Société Chimique de France. Bulletin 1919, ser. 4, v. 25] no. 1, p. 4-9.

DESCRIPTORS: *Gold alloys, *Platinum alloys, *Crucibles, Alkali metals, Corrosion resistant alloys, Iridium.

Nosaki, Ryo, Hori, Fumiaki, and Kurihara, Kanjin.
METHOD OF PHOTOMETRIC DETERMINATION OF OXALIC ACID AND CALCIUM BY USING ULTRAVIOLET ABSORPTION OF IRON OXALATES (III) COMPLEX BODY. [1963] 6p. (figs. tables omitted) 3 refs.
Order from SLA $1.10 63-18810

Trans. of Nihon Kagaku Zasshi (Japan) 1961, v. 82, no. 6, p. 713-715.

DESCRIPTORS: *Oxalic acids, *Calcium, *Iron compounds, Oxalates, *Complex compounds, *Perchlorates, *Ultraviolet spectroscopy, Chlorine, Sulfuric acid, Acetic acids, Tartrates, Citric acids.

A method for the photometric determination of oxalic acid and calcium was tried by using the ultra-violet ray absorption of iron oxalates (III) complex body with the composition of 1 ; 1. In a solution (whose pH is 0.87) which contains three cubic centimeters of one N perchloric acid, from 44 to 440 (gamma) of oxalate ion $C_2O_4^{2minus}$ and 10 cubic centimeters of a 10 ^{minus} 3 mol/liter iron perchlorate solution in its 25 cubic centimeters, it was found that the Beer law is valid by measuring the absorbency at 290 m(mu) after leaving it for a period of two to three hours under cover against diffused light. Also, the effects of chlorine, sulfuric acid and acetic acid ion as well as tartaric acid and citric acid were investigated. Next, calcium was isolated as oxalate by means of micro-operation. The filtered precipitate was dissolved with perchloric acid and the free oxalic acid was determined in the same fashion. As a result, from four to 600 (gamma) of calcium was determined. The result of a quantitative determination of calcium by using five cubic centimeters of well water (to show an example) was in good agreement with the analytical value obtained in accordance with EDTA titration. (Author)

Pribil, R[udolph].
COMPLEXOMETRIC TITRATIONS (CHELATOMETRY) IX. CONTRIBUTION TO THE DETERMINATION OF NICKEL IN PRESENCE OF COBALT [Komplexometricke Titrace (Chelatometrie). IX.]. [1963] 6p. 9 refs.
Order from SLA $1.10 63-18159

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] (Czechoslovakia) 1954, v. 19, p. 1171-1174 (also pub. in Chem[icke] Listy (Czechoslovakia) 1954, v. 48, p. 825-827).

DESCRIPTORS: *Nickel, Chemical analysis, Titration, *Cobalt compounds, *Cyanides, Complex compounds, Chelate compounds, Potassium compounds, *Sequestering agents.

A simple method for determining nickel and cobalt in presence of each other by complexometric titration has been worked out. The method depends on the different properties of the complexes of divalent nickel and trivalent cobalt toward potassium cyanide. The method is primarily applicable to the determination of nickel in presence of small amounts of cobalt. (Author) (See also 63-18159)

Ritter, H. and Gude, F.
A SIMPLE AND RAPID METHOD OF DIRECT QUANTITATIVE ANALYSIS AND DICYCLOPENTADIENE. [1963] 11p (figs omitted)
Order from K-H $11.00 K-H-6699

Trans. of Brennstoff-Chemie (West Germany) 1957, v. 38, p. 173-174.

DESCRIPTORS: *Cyclopentadiene, Quantitative analysis

Sajo, I.
INDICATOR SYSTEMS ON BASIS OF VANADIUM KOMPLEXONS. [1963] 7p 3refs
Order from SLA $1.10 63-18157

Trans. of Talanta (Gt. Brit.) 1963, v. 10, p. 493-497.

DESCRIPTORS: *Chemical indicators, Dyes, *Vandium compounds, Complex compounds, Volumetric analysis, Ethylenedinitrilo tetracetate.

Quinquevalent vanadium is displaced from its EDTA complex by almost all ions which react with EDTA. The liberated vanadium can then give color reactions with many dyes, and this can be used to indicate the end-point in a complexometric titration. Many indicator systems can be devised on this basis, and the present paper deals with systems containing vanadium^{V}, EDTA and diphenylcarbazone, pyrocatechol violet, carminic acid or morin. (Author)

Schwarzenbach, G., Biedermann, W., and Bangerter, F.
COMPLEXONES. VI. NEW SIMPLE TITRATION METHODS FOR THE DETERMINATION OF WATER HARDNESS. [1963] 11p refs
Order from SLA $1.60 63-20177

Trans. of Helvetica Chimica Acta (Switzerland) 1946, v. 29, p. 811-818.
Another trans. is available from SLA as 2884, 12p.

DESCRIPTORS: *Sequestering agents, *Water supplies, Hardness, *Calcium, *Magnesium, *Volumetric analysis.

Shapiro, M. Ya. and Kolesnikova, V. G.
A METHOD FOR CONCENTRATING FLUORINE IONS IN THE ANALYSIS OF NATURAL WATERS (Metod Kontsentrirovaniya Ftor pri Analize Prirodnykh Vod) tr. by Z. D. Knowles. 10 July 63, 6p. 12 refs. NIH no. 7-15-63.
Order from OTS or SLA $1.10 63-23179

Trans. of #Zhurnal Analiticheskoi Khimii (USSR) 1963, v. 18, no. 4, p. 507-509.

DESCRIPTORS: *Water, *Fluorine, *Ions, Magnesium compounds, Hydroxides, Chemical analysis.

The method of concentration of the fluorine ions from natural waters was worked out by means of suspension of the magnesium hydroxide. The method of fluorine-ion concentration gives results close to the results obtained by means of the classic method of distillation. (Author)

Specker, H. and Trub, H.
DETERMINATION OF TRACES OF LEAD IN CONCENTRATED PHOSPHORIC ACID BY ANODIC AMALGAM VOLTAMMETRY. [1963] 6p (refs. omitted).
Order from SLA $1.10 63-18151

Trans. of Zeitschrift für Anal[ytische] Chem[ie] (West Germany) 1962, v. 186 [no. 1] p. 123-127.

DESCRIPTORS: *Lead, Microanalysis, *Phosphoric acid, Anodes, Mercury alloys, Voltmeters, Pyridines.

By means of anodic amalgam voltammetry it is possible to determine very small traces of lead and other heavy metals in concentrated phosphoric acid, (sp. gr. 1.7). The only reagent added is pyridine. Thus the danger of introducing impurities is very small in contract to existing methods. The time required for a single determination is 15 min. The variance for 1 ppm. lead from 11 determinations was 3.8%. (Author)

Sturm, F. V. and Ressel, M.
INFLUENCE OF EXPERIMENTAL CONDITIONS DURING ANALYTICAL DETERMINATIONS BY MEANS OF SQUARE WAVE POLAROGRAPHY AFTER ELECTROLYSIS ON A STATIONARY ELECTRODE. [1963] 23p. 31 refs.
Order from SLA $2.60 63-18150

Trans. of Zeitschrift für Anal[ytische] Chem[ie] (West Germany) 1962, v. 186 [no. 1] p. 63-79.

DESCRIPTORS: *Polarographic analysis, *Electrolysis, Electrodes, Mercury, *Electrochemistry.

A combination of square-wave polarography with the anodic stripping technique is described. Concentration of the metals is carried out by pre-electrolysis at a stationary mercury-drop electrode in a stirred solution. Because of the unsolved hydrodynamic conditions at the spherical electrode, the limiting diffusion current cannot be treated theoretically. An empirical relationship adequately gives the dependence of the limiting current on the experimental parameters. Influence of the following experimental conditions on the A.C. polarographic wave-height of the anodic oxidation was determined experimentally: Size of the electrode, stirring velocity, potential of pre-electrolysis, duration of pre-electrolysis, voltage scanning-speed, components of the solution (metal-ion and supporting-electrolyte concentration, presence of oxygen and surface-active agents). It was demonstrated that interference due to compound-formation in the amalgam phase becomes less important with decreasing metal-ion concentration. Small volumes of solution (down to 0.2 m.) can be investigated in the microcell after pre-electrolysis without stirring. Four nonagrams Tl^{+}, 1.2 nonagrams Pb^{++} and 0.2 nonagrams Cd^{++} can be determined quantitatively in a solution which has not been de-aerated. Optimum experimental conditions and reproducibility of the measurements are given. The sensitivity is given for elements Bi, Cu, Sb, Pb, Sn, Tl, Cd, In, Zn, Mn and Ba. (Author)

Thiel, A. and Peter, O.
PRINCIPLES AND APPLICATIONS OF ABSOLUTE COLORIMETRY. COMMUNICATION 12. THE ABSOLUTE COLORIMETRIC DETERMINATION OF IRON. [1963] [5p] (figs omitted) 6refs
Order from SLA $1.10 63-20322

Trans. of Zeitschrift für Analytische Chemie (Germany) 1935, v. 103, p. 161-166.

DESCRIPTORS: *Iron, Colorimetric analysis, *Colorimetry.

Tomonari, Akihisa.
AN IMPROVEMENT ON THE METHOD FOR SPECTROPHOTOMETRIC DETERMINATION OF TRACES OF CHLORIDE ION. [1963] 7p. (figs. tables omitted) 6 refs.
Order from SLA $1.10 63-18809

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 6, p. 693-695.

DESCRIPTORS: *Chlorides, Ions, Chemical analysis, *Spectroscopy, *Colorimetric analysis, Calibration, *Iron compounds, *Perchlorates, *Mercury compounds, *Thiocyanates, Nitrates.

An iron perchlorate solution and a mercuric thiocyanate solution were added to a specimen solution and the chloride ion was determined by measuring the absorbency of an orange-colored aqueous solution at 460 m(mu). It was possible to determine from 0.1 to 15 ppm. of chloride ion speedily and accurately. (Author)

Inorganic Chemistry

JOURNAL OF INORGANIC CHEMISTRY, 1956, VOL. 1: INDEX. 1963, 100p PL-480 AEC.
Order from OTS $1.00 AEC-tr-4594

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1956, v. 1, index nos. 1-12.

DESCRIPTORS: *Indexes, Subject indexing, *Inorganic compounds, Bibliographies.

POTASSIUM: THE ELEMENT (FORMATION AND PREPARATION OF THE METAL). [1963] 22p 186refs
Order from SLA $2.60 63-16124

Trans. of Gmelins [Handbuch der Anorganischen - Chemie] (Germany) n.d., unidentified ed., p. 63-71.

DESCRIPTORS: *Potassium, Electrolysis, Reduction (Chemistry), Chemical reactions, Alkali Metals, Vaporization, Pyrolysis, *Potassium compounds.

PURIFICATION OF BORON: ANNOTATED BIBLIOGRAPHY BASED ON SOVIET OPEN LITERATURE IN 1956. Rept. no. 1 on AID Work Assignment no. 41. 13 Sep 53 [11p] 7refs AID Rept. B-63-114
Order from OTS or SLA $1.60 63-24106

DESCRIPTORS: Bibliographies, *Boron, Purification, Group III elements, Metalloids.

Andrussow.
ON THE CATALYTIC PRODUCTION OF HYDROCYANIC ACID FROM AMMONIA, METHANE AND AIR [Über die Katalytische Herstellung von Blausäure aus Ammoniak, Methan und Luft]. [1963] 22p. 20 refs.
Order from OTS or SLA $2.60 63-18105

Trans. of Oppau Ammonia Laboratory (Germany). Rept. 1362, 20 Nov 34. (PB-50549)

DESCRIPTORS: *Hydrocyanic acids, Production, Synthesis (Chemistry), *Ammonia, *Methanes, Air, Nitric acid, Oxidation-reduction reactions, *Catalysts, *Platinum catalysts, *Nickel catalysts, Explosions, Impurities, Sodium compounds, *Cyanides.

Brauer, G.
HANDBOOK OF PREPARATIVE INORGANIC CHEMISTRY, VOL. 1. 1963, 1025p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified German mono., Stuttgart, n.d.

DESCRIPTORS: *Inorganic compounds, *Handbooks, Laboratory equipment.

Chaigneau, Marcel.
BORON CYANIDE. [1963] 2p.
Order from SLA $1.10 63-18178

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1954, v. 239, p. 1220-1222 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Boron compounds, *Cyanides, Silver compounds, Chlorides, Chemical properties, *Chemical analysis

A report of the examination of a sample of BCN which was formed by BCl_3 lying in contact with AgCN over a period of 40 years.

Eidmann, W.
THE ACTION OF MAGNESIUM UPON NITROGEN CONTAINING COMPOUNDS, ESPECIALLY UPON CYANIDES: EXCERPTS. [1963] 3p.
Order from SLA $1.10 63-16171

Trans. of Journal für Praktische Chemie (Germany) 1899, v. 59, no. 2, p. 10-11.

DESCRIPTORS: *Magnesium, Magnesium compounds, *Nitrogen compounds, *Cyanides, Chemical properties, Chemical reactions.

Hüttig, Gustav, F. and Frankenstein, Wilhelm.
CONTRIBUTION TO KNOWLEDGE OF OXIDE-HYDRATES. XIX. [CONTRIBUTION TO KNOWLEDGE OF SYSTEM MAGNESIM OXIDE-CARBON DIOXIDE] (Beiträge zur Kenntnis der Oxydhydrate. XIX. Zur Kenntnis des Systems Magnesiumoxyd/Kohlendioxyd). [1963] [8]p. (foreign text included) 3 refs
Order from SLA $1.10 63-18131

Trans. of [Zeitschrift fllr Anorganische und Allgemeine Chemie (Germany) 1930, v. 185] p. 413-416.

DESCRIPTORS: *Magnesium compounds, *Oxides, Hydrates, *Carbonates, *Carbon dioxide, Decomposition, X-ray diffraction analysis, Phase studies,

(See also 63-18127)

Klemm, W. and Kilian, H.
AMMONIATES OF GALLIUM AND INDIUM TRIFLUORIDE (Ammoniakate von Gallium- und Indiumtrifluorid). [1963] [5p] (refs omitted) 2refs
Order from SLA $1.10 63-20267

Trans. of Z[eitschrift fllr] Anorg[anische und] Allgem[eine] Chem[ie] (Germany) 1939, v. 241, p. 93-96.

DESCRIPTORS: Fluorides, *Indium compounds, *Gallium compounds, Ammino compounds, Decomposition.

Tamba, Seigo.
METHOD OF PRODUCING MAGNESIUM HYDROXIDE FROM OCEAN WATER OF SALT WATER. [1963] [3p]
Order from OTS or SLA $1.10 63-20159

Trans. of Japanese patent 172,596, cl. 144, 6 (Oxide, Hydroxide, Sulphide, Carbide) appl. 11 Oct 38 as no. 13921 (judgement of appeal rendered: 1938, no. 1045) granted 30 Apr 46, by Minoru Suzuki.

DESCRIPTORS: *Magnesium compounds, *Hydroxides, Sea water, Synthesis (Chemistry), Calcium compounds, Sodium compounds, Potassium compounds

Tokareva, M. V. and Bergman, A. G.
FUSIBILITY DIAGRAM IN THE SYSTEM FROM CHLORIDES AND NITRATES OF POTASSIUM AND STRONTIUM. [1963] 22p (figs omitted)
Order from K-H $22.00 K-H-8653

Trans. of #Zhurnal Neorganicheskoi Khimii (USSR) 1957, v. 2 [no. 8] p. 1895-1906.

DESCRIPTORS: *Strontium compounds, *Potassium compounds, *Nitrates, *Chlorides, Phase studies

Organic Chemistry

METHOD FOR THE SEPARATION OF THE ISOMERS OF HEXACHLOROCYCLOHEXANE, IN PARTICULAR THE GAMMA ISOMER, STARTING WITH INDUSTRIAL PREPARATIONS OF HEXACHLOROCYCLOHEXANE. [1963] 3p
Order from OTS or SLA $1.10 63-18960

Trans. of French patent 971,647, gr. 14, cl. 1, filed 3 Aug 48, granted 9 Aug 50, pub. 19 Jan 51.

DESCRIPTORS: *Gammexane, *Hexachlorocyclohexane, *Synthesis (Chemistry), *Insecticides, Adsorption, Solvents, Centrifuge separation, Minerals, Molecular isomerism

The procedure for the separation of the isomers of hexachlorocyclohexane consists essentially in utilizing simultaneously the selective action of solvents and chromatography. As adsorbent supports the adsorbent supports generally used in chromatography are used, in particular the active earths such as montmorillenite or a bentonite. If necessary, pressure is applied at the same time. A variant consists of carrying out the operation in a centrifuge. The solvent can be recovered and returned to the cycle. (Author)

PROCEDURE FOR THE SIMULTANEOUS PRODUCTION OF CRUDE HEXACHLOROCYCLOHEXANE AND THE PURE GAMMA ISOMER. [1963] 5p 1ref
Order from OTS or SLA $1.10 63-18964

Trans. of French patent 962,951, cl. 4, gr. 1, filed 8 Mar 48, granted 19 Dec 49, pub. 26 Jun 50, by Solvay & Cie (request for pat. filed 18 Mar 47, Belgium).

DESCRIPTORS: *Hexachlorocyclohexanes, *Gammexane, *Synthesis (Chemistry), Crystallization, Boiling, Cooling, Molecular isomerism, Insecticides

The invention has for its objects a process for the production of crude hexachlorocyclohexane and of technically pure gamma isomer, the said process consisting of the crystallization of solutions supersaturated with alpha, beta and gamma isomers by cooling of these solutions to a temperature greater than the temperature of crystallization of benzene the process being characterized in that a solution saturated with alpha, beta and gamma isomers at room temperature is brought to boiling in order to evaporate a portion of the solvent and in that the said boiling is interrupted before the solution has attained saturation, determined at the final temperature of crystallization, in isomers other than alpha, beta and gamma, after which the solution thus obtained is gradually and slowly cooled without excessive agitation in order to bring about the exclusive crystallization of the gamma isomer, this isomer being separated preferably by filtration or by continuous decantation of the liquid consisting of a solution of a mixture of isomers of hexachlorocyclohexane. (Author)

PROCESS FOR PRODUCTION OF TERTIARY ALCOHOLS. [1963] 3p 1ref
Order from OTS or SLA $1.10 63-20041

Trans. of German patent 166,899 [1902].

DESCRIPTORS: *Grignard reactions, *Alcohols, *Phenols, Synthesis (Chemistry), Magnesium compounds, Halides, Carboxylic acids.

PROCESS FOR THE PREPARATION OF ALKYL ETHERS, MONOHYDRIC PHENOLS, AND THEIR HALOGEN SUBSTITUTION PRODUCTS. [1963] 3p. 3 refs.
Order from OTS or SLA $1.10 63-18680

Trans. of German patent 411,052, 23 Mar 25, by Aktien-Gesellschaft für Anilin-Fabrikation.

DESCRIPTORS: *Ethers, Alkyl radicals, *Phenols, *Halides, Bromides, Chlorides, Preparation, Synthesis (Chemistry), Sodium compounds, Hydroxides.

PROCESS FOR THE PREPARATION OF ALKYL HALIDES. [1963] 12p
Order from OTS or SLA $1.60 63-20273

Trans. of French patent 780,057, cl. 1, gr. 14, appl. 17 Oct 34, granted 24 Jan 35, pub. 18 Apr 35, by I. G. Farbenindustrie Aktiengesellschaft, Germany (three pat. appl. and addition pat. filed, Germany; patents: 20 Oct, 17 Nov 33; addition pat.: 6 Jun 34). Another trans. is available from SLA as 1655, 12p.

DESCRIPTORS: *Alkyl radicals, *Ethylenes, Gases, Mixtures, Acids, *Halides, Catalysts, Chemical reactions, Synthesis (Chemistry).

The invention relates to a process for the preparation of alkyl halides consisting of reacting olefins or a gas mixture containing olefins with gaseous halohydric acids in the presence of catalysts in the liquid state and under such conditions that they remain continuously in motion. (Author)

PROCESS FOR THE PREPARATION OF ETHYLENE GLYCOL. [1963] 4p.
Order from OTS or SLA $1.10 63-18100

Trans. of mono. [Verfahren zur Herstellung von Äthylenglykol] Ludwigshafen, 9 July 42, 7p. (PB-68425)

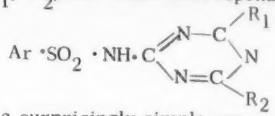
DESCRIPTORS: *Ethylenes, *Glycols, Synthesis (Chemistry), Formaldehyde, Methanols, Carbon compounds, Monoxides, Hydrogen, Ethers, Saponification,

PROCESS FOR THE PREPARATION OF NEW 2-(ARYLSULFONAMIDO)-1, 3, 5-TRIAZINES. [1963] 7p
Order from OTS or SLA $1.10 63-18900

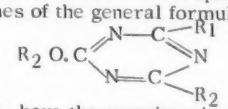
Trans. of Austrian patent 183,758 [cl. 12e3, 22, by Osterreichische Stickstoffwerke AG] filed 20 Mar 52 [pat. in force from 15 Apr 55] pub. 10 Nov 55. Another trans. is available from OTS or SLA $1.10 as 63-23769, 15 Aug 63, 10p.

DESCRIPTORS: *Sulfonamides, *Triazines, Amines, Benzene derivatives, Alkoxy radicals, Cyano radicals, Halides, Salts, Aryl radicals,

According to the proposed procedure, new 2-arylsulfonamido-1, 3, 5-triazines which are substituted in the triazine ring by aryl or alkoxy groups or by a combination of these (R_1, R_2) and which correspond to the general formula:



can be prepared in a surprisingly simple manner by the reaction of arylsulfonamides present as salts, preferably as alkali salts, with the corresponding alkyloxy or aryloxy triazines of the general formula:



in which R_1 and R_2 have the meaning given above but R_3 is an alkyl or aryl residue, where a cleavage of the corresponding alcohol or phenol, R_3 OH, takes place. (Author)

PROCESS FOR THE PREPARATION OF ORGANIC PEROXIDES PARTICULARLY USEFUL FOR CROSS-LINKING POLYOLEFINS. [1963] 4p
Order from OTS or SLA $1.10 63-20569

Trans. of French patent 1 291 965 [by] Noury & van der Lande N. V., 19 Mar 62.

DESCRIPTORS: *Synthesis (Chemistry), *Organic compounds, *Peroxides, Polyethylene plastics, Polymers,

The invention includes principally a procedure for the preparation of di-tertiary peroxides in which is reacted a compound of general formula: $R_1(R_2)C=C(R_3)R_4$ or a compound of general formula: $R_1(R_2)C=C(R_3)A(R_3)C=C(R_2)R_1$ in which R_1, R_2, R_3, and R_4 represent the alkyl, cycloalkyl or aryl groups, R_1, and/or R_2 can likewise represent a hydrogen atom and A represents an aromatic or aliphatic group having up to 6 carbon atoms, with a tertiary hydroperoxide in the presence of a catalyst with acid reaction. (Author)

PRODUCTION PROCEDURE FOR INDOLE. [1963] 2p
Order from OTS or SLA $1.10 63-20299

Trans. of unidentified mono. [issued] by I. G. Farbenindustrie A. G.] Ludwigshafen, 6 May 42 (PB 70057)

DESCRIPTORS: *Indoles, Distillation, Sulfites, Purification, Crystallization

Agatova, A. I., Vartanyan, L. S., and Emanuel, N. M. THE MECHANISM OF THE REACTION BETWEEN FREE RADICALS FORMED FROM INHIBITORS OF RADICAL PROCESSES AND PROTEIN SH-GROUPS. [1963] 4p.
Order from ATS $6.75 ATS-53Q71R

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1963, v. 150, no. 3, p. 547-550.

DESCRIPTORS: *Free radicals, *Proteins, Sulfides, Hydrogen compounds, Inhibition.

Alquist, Francis N., Britton, Edgar C., and Kauer, Kenneth C.
REFINEMENTS TO THE ADDITIVE CHLORINATION OF BENZENE BY A CATALYTIC METHOD. [1963] 13p 1ref
Order from OTS or SLA $1.60 63-18957

Trans. of French patent 973,774, gr. 1, cl. 4, filed 18 Oct 48, granted 20 Sep 50, pub. 14 Feb 51, by The Dow Chemical Co., U. S. A. (Priority claimed 12 Mar 48, U. S. A.).

DESCRIPTORS: *Hexachlorocyclohexane, *Synthesis (Chemistry), *Insecticides, *Chlorination, *Benzenes, Catalysis, *Gammexane, Methanes, Chlorides, Bromides, Chloroform, Ethanes, Ethylenes

The invention is relative to a process for the preparation of 1, 2, 3, 4, 5, 6-hexachlorocyclohexane, also known under the name of benzene hexachloride ($C_6H_6Cl_6$). The invention has for its particular object a process which will permit the production of the gamma isomer (with insecticidal activity) of hexachlorocyclohexane in greater proportions in the crude product than is possible by the methods of manufacture known up to this time. (Author)

Andrianov, K. A.
METALLORGANIC POLYMERS. 1963, 400p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Metalorganic compounds, *Polymers, *Silicones, Synthesis (Chemistry).

Bockmühl, M. and Ehrhart, G.
PROCESS FOR THE PREPARATION OF AROMATIC COMPOUNDS. [1963] 3p 1ref
Order from OTS or SLA $1.10 63-20278

Trans. of German patent 644,486, by I. G. Farbenindustrie A.G., 4 May 37, addition to pat. 633,083.

DESCRIPTORS: *Benzene derivatives, *Benzoic acids, Tolyl radicals, Synthesis (Chemistry), Alkali metals, Sodium.

(See also 63-20277)

Bockmühl, M. and Ehrhart, G.
PROCESS FOR THE PREPARATION OF AROMATIC COMPOUNDS. [1963] 4p 1ref
Order from OTS or SLA $1.10 63-20277

Trans. of German patent 671,098, by I. G. Farbenindustrie A.G., 31 Jan 39.

DESCRIPTORS: *Benzene derivatives, Synthesis (Chemistry), Alkali metals, *Sodium, Phenyl radicals, Acetic acids, *Camphors, *Acetonitriles.

Davydov, B. E., Krentsel', B. A., Popova, Yu. A., and Prokof'eva, L. V.
PREPARATION AND ELECTROPHYSICAL PROPERTIES OF SOME POLY-SCHIFF BASES. 23 Oct 63, 5p 11refs JPRS: 21573.
Order from OTS $0.50 63-31992

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1963, v. 5, no. 3, p. 321-324.
Another trans. is available from ATS $6.25 as ATS-92Q70R [1963] 4p.

DESCRIPTORS: *Nitriles, *Polymers, Synthesis (Chemistry), Condensation reactions, Phenyl radicals, *Amines, Butanones, Aldehydes, Chemical analysis, Heat treatment, Spectra (Infrared), Electrical conductance, Semiconductors.

Poly-Schiff bases were synthesized by condensation of p-phenylenediamine with diacetyl, terephtalic aldehyde and glyoxal. The elementary composition and solubility of the products were determined and their thermal treatment was carried out at 250 and 300°. The IR spectra of the products showed the presence of conjugated double bonds, which in accordance with modern views are responsible for the semiconductor properties of the polymeric materials. On this basis the temperature dependence of the electroconductivity was determined and the σ_0, σ_{20} and ΔE values were calculated. It was found that the temperature dependence of the electroconductivity for the given specimens obeys the exponential curve: $\sigma = \sigma_0 e^{-\Delta E/2kT}$. (Author)

Dolgov, B. N.
TETRA-SUBSTITUTED MONOSILANES SiR_4. [1963] [16]p. 43 refs.
Order from SLA $1.60 63-16802

Trans. of mono. Chemistry of Silico-Organic Compounds, n.p., 1933, p. 26-34.

DESCRIPTORS: *Silanes, Substitution reactions, Synthesis (Chemistry), Physical properties, Chemical properties.

Dubsky, J. V.
THE AFFINITY SATURATION OF PRINCIPAL AND SECONDARY VALENCES IN COMPOUNDS OF HIGHER ORDER, PT. II. [1963] 17p 9refs
Order from SLA $1.60 63-18556

Trans. of J[ournal für] Prakt[ische] Chem[ie] (Germany) 1916, v. 93, p. 142-161.

DESCRIPTORS: *Complex compounds, Valence, *Copper compounds, *Nickel compounds, *Zinc compounds, *Mercury compounds, Iron compounds, *Iron compounds, *Cobalt compounds, *Chromium compounds, *Bismuth compounds, *Lead compounds, Methyl radicals, Ethyl radicals, *Xanthic acids, *Pyridines, *Ammonia, Addition reactions, *Aluminum compounds, *Sulfonic acids.

Einhorn, Alfred.
PROCESS FOR PREPARATION OF METHYLOLAMIDES [1963] 2p
Order from OTS or SLA $1.10 63-20208

Trans. of German patent 162,395, 25 Jul 05.

DESCRIPTORS: *Amides, Methyl radicals, Synthesis (Chemistry), Drugs, Photographic chemicals.

Engel, M.
ACTION OF AMMONIA ON SOME CHLORINATED DERIVATIVES OF ETHANE: DIRECT FIXATION OF THE ELEMENTS OF AMMONIA UPON UNSATURATED COMPOUNDS. [1963] 3p
Order from SLA $1.10 63-20319

Trans. of [Academie des Sciences, Paris]. Compt[es] Rendus (France) 1887, p. 1621-1624 (pub. by Gauthier-Villars et Cie, Paris).

DESCRIPTORS: Ethanes, *Ammonia, *Amines, * *Vinyl chlorides, *Ethylenes, *Chlorides,

Ermolaeva, V. G. and Shchukina, M. N.
INVESTIGATIONS IN A PYRIDYLTHIAZOLYL-METHANE SERIES (Issledovaniya v Ryadu Piridiltyazolilmetana) tr. by Richard M. Holden. Apr 63 [20]p. 5 refs. E-T-R-63-5.
Order from OTS or SLA $1.60 63-23763

Trans. of #Zhurnal Obshchei Khimii (USSR) 1962, v. 32 [no. 8] p. 2664-2670.

DESCRIPTORS: *Pyridine derivatives, *Thiazoles, Methanes, *Alcohols, Ketones, Synthesis (Chemistry), Molecular structure, Chemical properties, Free radicals, Ultraviolet spectroscopy.

Catalytic hydrogenation of 4-pyridyl-2'-thiazolylketone, which is synthesized from the ethyl ether of isonicotinic acid and 2-lithiumthiazol, yielded the 4-pyridyl-2'-thiazolylcarbinol; its structure was revealed by UV spectra analyses, and by their comparison with the spectra of the phenyl-2-thiazolylcarbinol and the tertiary phenyl-4-pyridyl-2'-thiazolyl-and methyl-4-pyridyl-2'-thiazolylcarbinols. Analysis of the chemical properties of 4-pyridyl-2-thiazolyl carbinol showed that: (a) during an acetic anhydride reaction, prototropic regrouping of hydrogen from methane carbon to the nitrogen of the pyridine nucleus takes place and a diacetyl derivative forms; (b) in alkaline and sodium alcoholate solutions, 4-pyridyl-2'-thiazolylcarbinol forms stable, colored free radicals; (c) the radical nature of the 4-pyridyl-2'-thiazolylcarbinolate conversion is an easy proof of its acidification by atmospheric oxygen forming a peroxide (the Schmidlin effect), by the fact that a relationship exists between the degree of dissociation and temperature and by the EPR spectrum; (d) the iodomethylate of 4-pyridyl-2'-thiazolylcarbinol also forms radicals, producing intensely colored solutions in aqueous alkalies, ammonia and in alcohol sodium alcoholate solutions. These solutions are quickly acidified by atmospheric oxygen forming the iodomethylate of the 4-pyridyl-2'-thiazolylketone and an alkali metal peroxide. (Author)

Feofilaktov, V. V. and Semenova, N. K.
REACTION OF AROMATIC DIAZO COMPOUNDS IN COUPLING WITH ALKYL ACETOACETIC ESTERS AS A METHOD OF PRODUCING ARYLHYDRAZIDES OF α-KETOACIDS, α-AMINO-ACIDS AND NITROGEN CONTAINING HETEROCYCLIC COMPOUNDS. XIV. INTERACTION OF THE DIETHYL ESTER OF α-ACETOGLUTARIC ACID AND CERTAIN OF ITS ANALOGS WITH ARYLDIAZONIUM COMPOUNDS. [1963] [12]p. 34 refs.
Order from OTS or SLA $1.60 63-14634

Trans. of #[Zhurnal Obshchei Khimii] (USSR) 1953, v. 23, p. 450-463.

DESCRIPTORS: *Ethyl ethers, *Amino acids, *Nitrogen compounds, *Esters, *Glutaric acids, *Acetyl radicals, *Condensation reactions, *Alkyl radicals, *Azo radicals, Hydrazines, Hydrazones, Chemical bonds.

Granger, Camille and Thiesse, Xavier.
THE CHROMATOGRAPHIC SEPARATION OF THE EPSILON ISOMER OF HEXACHLOROCYCLOHEXANE. [1963] 3p. 3 refs.
Order from SLA $1.10 63-18249

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1951, v. 232, p. 2456-2458 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Cyclohexanes, Chlorides, Chlorocarbons, *Chromatographic analysis, *Methanes, Nitro radicals, Silicon compounds, Dioxides, *Hexachlorocyclohexanes.

It is shown that the partition chromatography on silica treated with nitromethane (Aepli's method) separates the epsilon isomer perfectly from the other isomers of hexachlorocyclohexane while the fractional absorption on moist silica leads to a mixture of gamma and epsilon (Author)

Gruber, Wolfgang, Kaufler, Felix, and Moldenhauer, Otto.
THE PREPARATION OF MONOCHLORO-ACETIC ACID. [1963] 1p
Order from OTS or SLA $1.10 63-20318

Trans. of German patent 638,117, 10 Nov 51, 193C1 (C1 120 12).

DESCRIPTORS: *Chloroacetic acids, Synthesis (Chemistry), Chlorine, *Acetic acids, Acetic anhydrides.

The invention concerns a preparation method for monochloro acetic acid by the reaction of chlorine with an acetic acid - acetic anhydride - mixture in the heat, the anhydride concentration being not more than 30% and the chlorine pressure being 1/5 atm. (Author)

Hamada, Masayuki.
BENZENE HEXACHLORIDE: A FOURTH DIGEST AND LIST OF PUBLICATIONS. [1963] [23p] 208refs
Order from SLA $2.60 63-18671

Trans. of Botyu-Kagaku (Japan) 1952, v. 17, p. 64-[74].

DESCRIPTORS: *Hexachlorocyclohexanes, *Insecticides, *Benzenes, *Chlorides, Crystal structure, Physical properties, Synthesis (Chemistry), Purification, Quantitative analysis, Bibliographies

Köster, Hans.
REDUCTION OF CARBON DIOXIDE TO HIGHER HYDROCARBONS AT ATMOSPHERIC PRESSURE WITH CATALYSTS OF THE FERRIC GROUP. [1963] 23p (figs omitted) 8refs
Order from SLA $2.60 63-20634

Trans. of Brennstoff-Chemie (Germany) 1936, v. 17, p. 221-228.

DESCRIPTORS: *Carbon dioxide, *Catalysts, *Iron catalysts, Reduction (Chemistry), Hydrocarbons, *Gasoline, Barometric pressure

Kryukov, Yu. B., Smirnova, R. M. and others.
THE INTERMEDIATE STAGES OF LIQUID PHASE OXIDATION OF SECONDARY ALCOHOLS TO KETONES. [1963] [10]p. 24 refs.
Order from OTS or SLA $1.10 63-18844

Trans. of Neftekhimiya (USSR) 1963, v. 3, no. 2, p. 238-245.

DESCRIPTORS: *Ketones, *Alcohols, *Oxidation, Phase studies, Oxygen, Isotopes, Hydroxyl radicals, Exchange reactions.

It was established by the example of tetradecanols, that the liquid-phase oxidation process of higher secondary alcohols by molecular oxygen, enriched with the heavy isotope O^{18}, is accompanied by an oxygen isotope exchange between the reaction products - ketone and water. The exchange rate is slower than the reaction rate, leading to oxygen exchange. Process of sec. alcohol oxidation to ketone is itself not connected with the oxygen exchange in hydroxyl group through the oxygen of oxidant. It was shown, that in liquid-phase oxidation of secondary alcohols the intermediate product - hydroxyhydroperoxide (or its radical) - is decomposed with formation of ketones and without rupture of O-O bond in peroxide bridge. An experimentally based scheme of the oxidation mechanism of secondary alcohols to ketones was proposed, covering the oxidation conditions in liquid- and also in gaseous phases. (Author)

Lange, M. P. W. de.
THE FORMATION OF PHENOL BY THE ACTION OF SODIUM METHYLATE ON THE HIGHER CHLOROBENZENES. [1963] [4]p. 4 refs.
Order from SLA $1.10 63-18245

Trans. of Rec[ueil des] Trav[aux] Chim[iques des Pays-Bas] (Netherlands) 1919, v. 38, p. 101-105.

DESCRIPTORS: *Phenols, Synthesis (Chemistry), Sodium compounds, *Alkoxy radicals, *Benzenes, *Chlorides.

Meerwein, Hans and Bersin, Theodor.
INVESTIGATIONS CONCERNING METAL ALCOHOLATES AND ORTHO ACID ESTERS. I. ALKOXO ACIDS AND THEIR SALTS. [1963] [34]p. 37 refs.
Order from SLA $3.60 63-18255

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) 1929, v. 476, p. 113-150.

DESCRIPTORS: *Esters, *Metalorganic compounds, *Alkoxy radicals, *Alkali metal compounds, *Alkyl radicals, Hydroxyl radicals, Methyl radicals. Propyl radicals, Ethyl radicals, Organic acids.

Milazzo, Giulio.
THE ABSORPTION SPECTRUM OF THE TETRAPHENYLS OF SILICON, TIN, AND LEAD. [1963] 15p (figs omitted) 11refs
Order from SLA $1.60 63-18970

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1941, v. 71, p. 73-81.

DESCRIPTORS: *Lead compounds, *Tin compounds, *Silicon compounds, *Phenyl radicals, Absorption spectrum.

Nad, M. M. and Kocheskov, K. A.
METHOD FOR THE SYNTHESIS OF ORGANO-METALLIC LEAD COMPOUNDS WITH A SUBSTITUTED GROUP IN THE BENZENE NUCLEUS. [1963] 9p
Order from K-H $9.00 K-H 6108

Trans. of [Zhurnal Obshchei Khimii] (USSR) 1942, v. 12 [no. 7/8] p. 409-414.
Abstract trans. is available from OTS or SLA $1.10 in 61-20327 [1961] 6p.

DESCRIPTORS: *Metalorganic compounds, *Lead compounds, *Benzenes, Substitution reactions, Synthesis (Chemistry), Nuclei.

Nakamura, Masanobu and Gunji, Koki.
STUDIES ON SYNTHESIS AND X-RAY SPECTRA OF ETHYLENE-PALLADIUM CHLORIDE COMPLEX. [1963] [17p] 9refs
Order from SLA $1.60 63-20006

Trans. of Sekiyu Gakkai Shi (Japan) 1962, v. 5, p. 720-724.

DESCRIPTORS: *Complex compounds, *Ethylenes, *Palladium compounds, *Chlorides, Synthesis (Chemistry), X-ray diffraction analysis, Acetaldehydes, Vinyl radicals, Acetates, Acetals, *Catalysts, *Organic solvents.

An ethylene-palladium chloride complex was easily formed by direct reaction ethylene with palladium chloride in a non-polar solvent system, such as n-heptane, carbon tetrachloride, benzene, or p-xylene. The corresponding complexes formed from the direct reaction of ethylene with palladium chloride in non-polar solvents were stable; and they existed in the form of a complex (from the results of the study of their X-ray diffraction diagrams) even after one month's storage, although a part of the complex was decomposed to palladium chloride and the color of the complex faded slightly. On the other hand, it was not possible to isolate the corresponding complex in a stable state if the direct reaction of ethylene with palladium chloride was carried out in polar solvents. (Author)

Natta, G[Pino, P., Mazzanti, G., and Lanzo, R].
ETHYLENE POLYMERIZATION CATALYZED BY TITANIUM COMPOUNDS. [1963] 3p 6refs
Order from SLA $1.10 63-16555

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, no. 12, p. 1032-1033.
Another trans. is available from SLA as 58-751.

DESCRIPTORS: *Ethylenes, Polymerization, *Catalysts, *Titanium compounds, Chlorides, Phenyl radicals, *Metalorganic compounds, Polyethylene plastics, *Ziegler catalysts.

It is shown that the reaction product of $TiCl_4$ and $(C_5H_5)_2$ Ti $(C_6H_5)_2$ is, at low temperatures and pressures, an ethylene polymerization catalyst; whereas $(C_5H_5)_2$ Ti $(C_6H_5)_2$ possesses no such activity. The concept proposed previously (Natta, et al., J. Am-Chem. Soc. 79:2975, 1957), that the better catalysts of the transition metalorganic compound type must contain at least two different metal atoms, is now modified to include compounds in which the only metal atoms are Ti. The Ti atoms must, however, differ amongst themselves with regard to valence or to the groups to which they are attached.

Natta, Giulio, Porri, Lido, Carradini, Paolo, Morero, Domenico, and Broghi, Italo.
HYDROGENATION OF CRYSTALLINE ISOTACTIC 1, 2 AND SYNDIOTACTIC 1, 2-POLYBUTADIENES. [1963] 14p (figs omitted)
Order from K-H $14.00 K-H-10630

Trans. of Accademia Nazionale dei Lincei. [Classe di Scienze Fiziche, Matematiche e Naturali]. Rendiconti (Italy) 1960, ser. 8, v. 28, p. 452-460.
Another trans. is available from CTS(Chem) $10.40, subsequent copies $1.75/ea. as CTS(Chem)-263 [1962] 10p.

DESCRIPTORS: *Polymers, *Butadienes, Hydrogenation Crystal structure, Infrared spectroscopy

Nesmeyanov, A. N., Perevalova, E. G., Golognya, R. V., and Shilovtseva, L. S.
CONCERNING ARYL FERROCENES AND FERROCENYLAMINE. [1963] 10p
Order from K-H $10.00 K-H-7082 b

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 102 [no. 3] p. 535-538.
Another trans. is available from OTS or SLA $1.10 as 61-20228 [1961] 8p.

DESCRIPTORS: *Ferrocenes, *Nitrophenols, Phenols, *Amines, *Anilines, Molecular isomerism, Chemical reactions, Synthesis (Chemistry).

Novikov, I. N. and Zavgorodnii, S. V.
AUTOOXIDATION OF p-DICYCLOHEXYLBENZENE. [1963] [4p] 5refs
Order from OTS or SLA $1.10 63-20205

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1963, v. 148 [no. 4] p. 853-855.

DESCRIPTORS: *Benzene derivatives, *Cyclohexane derivatives, Oxidation, Peroxides, Benzoic acids.

It was shown that p-dicyclohexylbenzene (I) is easily oxidated by oxygen, in the presence of manganese rosinate alone or with some alkaline additives, to the mono- and dihydroperoxide. Oxygen attack is oriented on the tertiary carbon atoms in cyclohexane ring. Relative amounts of mono- and dihydroperoxides are to a strong degree functions of extent of the oxidation. Thus, at oxidative conversion of (I) to 40% the weight ratios II/III are 8:1. It is concluded that the introduction of cyclohexyl group in p-position of cyclohexylbenzene increased almost twice the oxidation rate of (I), as compared with that of cyclohexylbenzene. The oxidation rate and conversion degree of (I) increase with rising of the temperature from 110 to 130 C, but the hydroperoxide content of the reaction mass drops sharply thereby, since the hydroperoxides II and III, and also the cyclohexylbenzene hydroperoxide, thermally instable decomposed sharply at temperatures above 150 C. Oxygen absorption at 200 C by p-dicyclohexylbenzene occurs likewise energically, but p-cyclohexylbenzoic acid appears as the main oxidation product. (Extracted)

Perevalova, E. G. and Nesmeyanov, O. A.
HALOGEN COMPOUNDS OF FERROCENE. [1963] 6p
Order from K-H $6.00 K-H 8062

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 100 [no. 6] p. 1099-1101.
Another trans. is available from OTS or SLA $1.10 as 62-14278, 9 Oct 61 [7]p.

DESCRIPTORS: *Ferrocenes, *Halogen compounds, Synthesis, Iodine compounds, Bromine compounds, Chlorine compounds.

Petri.
CONCERNING THE PRODUCTION OF MONOCHLOROACETIC ACID FROM TRICHLOROETHYLENE. [1963] 2p
Order from OTS or SLA $1.10 63-18545

Trans. of mono. [issued by I. G. Farbenindustrie A. G.] Austausch, 2 May 42 (PB 755).

DESCRIPTORS: *Chloroacetic acids, *Ethylenes, *Chlorides, Sulfuric acid, Hydrolysis, Synthesis (Chemistry).

Petrov, A. D., Mironov, V. F., Ponomarenko, V. A. and Chernyshev, E. A.
SYNTHESIS OF ORGANOSILICON MONOMERS. 1963, approx 575p
Order from CB $22.50

Trans. of mono. [Sintez Kremniiorganicheskikh Monomerov, Moscow, 1961, 559p.].

DESCRIPTORS: *Organic compounds, *Silicon compounds, Synthesis (Chemistry), Plastics, Rubber, Polymers.

Ritter.
ON Di- AND TETRAHYDROPYRAN, II. [1963] 4p
Order from OTS or SLA $1.10 63-20183

Trans. of mono. issued by I. G. Farbenindustrie A.G., Mainkur, 2 May 41 (PB 803).

DESCRIPTORS: *Organic solvents, *Chlorides, *Bromides, Synthesis (Chemistry).

Ritter.
ON Di- AND TETRAHYDROPYRAN, III. [1963] 4p
Order from OTS or SLA $1.10 63-20185

Trans. of mono. issued by I. G. Farbenindustrie A.G., Mainkur, 2 May 42 (PB 817).

DESCRIPTORS: *Organic solvents, *Chlorides, *Bromides *Amides, Synthesis (Chemistry).

(See also 63-20183)

[Roberts, F. H.].
PREPARATION OF ALKAZID M (POTASSIUM METHYL ALANINE). [1963] 2p
Order from OTS or SLA $1.10 63-20152

Trans. from unidentified German language mono., n. p. [1945] (PB-1110).

DESCRIPTORS: *Alanines, *Methyl radicals, Potassium compounds

Ruth, D.
RESORCIN. [1963] 5p 1ref
Order from OTS or SLA $1.10 63-20326

Trans. of Anilinokraschnaya Promyshlennost' (USSR) [1932, v. 2, no. 7] p. 12-15.

DESCRIPTORS: *Resorcinol, Synthesis (Chemistry), Sulfuration

Schlubach, Hans Heinrich and Franzen, Volker.
RESEARCHES ON ACETYLENES. VI. THE REACTION OF ACETYLENES WITH PERACIDS: ACETYLENE OXIDES. [1963] 11p. 7 refs.
Order from SLA $1.60 63-18455

Trans. of Justus Liebigs Annalen der Chemie (West Germany) 1952, v. 577, p. 60-68.

DESCRIPTORS: *Acetylene, *Acetylene derivatives, *Oxides, Addition reactions, Organic acids, Carboxylic acids.

It is shown that the primary stage in the action of peracids upon acetylenes is the addition of 1 atom of oxygen, as with the ethylenes. But whereas in the latter the reaction comes to a stop with the ethylene oxides that are formed, the acetylene oxides produced from former compounds readily add more oxygen, with partial rearrangement, and involvent of the solvent and the recovery of carboxylic acids as end products. (Author)

Schulz, H. and Wagner, F.
THE SYNTHESIS AND REACTION PRODUCTS OF ACROLEIN. [1963] 30p 60refs
Order from SLA $2.60 63-18968

Partial trans. (p. 105-114) of Angew[andte] Chem[ie] (West Germany) 1950, v. 62 [no. 5] p. 105-[118]. A complete trans. is available from SLA mi$3.30, ph$7.80 as 59-17052 [1959] 50p.

DESCRIPTORS: *Acroleins, Synthesis (Chemistry), Chemical reactions, Vinyl radicals, *Acrylic acids, *Aldehydes, Ethers, Alcohols, *Glycerols, Amines, Pyridine derivatives, Butanols.

Topics include: Acrolein and α-alkyl homologues (historical, acrolein synthesis, process for industrial preparation); vinyl ketone; reaction products of acrolein (acrylic acid, ethers of polyalcohols from β-alkoxypropionaldehyde, allyl alcohols, glycols, polyamines, α-chloroacrolein, α-β-dichloroisobutyraldehyde, 2-chloro-1, 3-propanolal, dimeric acrolein and its homolouges and derivatives, β-picoline); and, polymolecular reaction products from acrolein (polymeric acrolein, acrolein-pentaerythritol condensation products).

Schuster, C[urt].
THE OXOSYNTHESIS. [1963] [17p] 86refs
Order from SLA $1.60 63-20637

Condensed trans. of Fortschritte der Chem[ischen] Forschung (West Germany) 1951, v. 2, p. 311-374. A complete trans. is available from SLA $5.60 as 63-18689 [1963] [58p].

DESCRIPTORS: *Oxo process, Synthesis (Chemistry), Reaction kinetics, Thermodynamics, Ethylenes, Acetylenes, Dienes, Benzenes, Oxygen compounds, Nitrogen compounds,

Topics include: definition and history; description of the process; working details of the synthesis; aliphatic olefines; acetylene; phenylacetylene; aliphatic dienes; aromatic hydrocarbons; aryl olefines; cyclic olefines; halo olefines; unsaturated oxygen compounds; and organic nitrogen compounds.

Shingu, Haruo.
PRODUCTION AND APPLICATION OF PROPYLENE OXIDE. [1963] [28p] 54refs
Order from SLA $2.60 63-20011

Trans. of Yukagaku (Japan) 1959, v. 8 [no. 8] p. 355-361.
Another trans. is available from ATS $21.75 as ATS-42P66J [1963] 13p.

DESCRIPTORS: *Propenes, *Oxides, Synthesis (Chemistry), Physical properties, Molecular structure, Chemical reactions, *Epoxides.

Shokova, E. A., Khromov, S. I. and others.
CATALYTIC REARRANGEMENTS OF CYCLONONANE AND CYCLODECANE IN THE PRESENCE OF A NICKEL CATALYST. [1963] [10]p. 10 refs.
Order from OTS or SLA $1.10 63-18752

Trans. of Neftekhimiya (USSR) 1962, v. 2, p. 280-287.

DESCRIPTORS: *Methanes, *Octanes, *Cyclohexanes, *Methyl radicals, *Cyclopentanes, *Heptanes, *Nickel catalysts, Raman spectroscopy, Kieselguhr, Benzenes, Catalysis.

Catalytic conversions of cyclononane and cyclodecane were studied in the presence of nickel upon kieselguhr and in a stream of hydrogen at 200 and 250 C. The substances undergo under these conditions a transannular dehydrocyclization, a direct hydrogenolysis and a stepwise isomerization of their cycles. The reaction products of cyclononane were n-nonane, n-octane, n-heptane, isomeric methyloctanes, cyclooctane, cycloheptane, cis-1, 2-dimethylcyclohexane and cyclopentanes; at 250 C, aromatic hydrocarbons were also produced. Cyclodecane gave n-decane, n-nonane, methylnonanes, cyclononane, trans-decalin; and at 250 C, also aromatic hydrocarbons. (Author)

Shostakovskii, M. F. and Bogdanov, I. F.
POLYMERIZATION OF SIMPLE VINYL ETHERS. I. VINYL BUTYL ETHER. [1963] [21p] (figs omitted) 10refs
Order from OTS or SLA $2.60 63-20173

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) 1942, v. 15 [no. 4] p. 249-259.
Abstract trans. is available from OTS or SLA $1.60 in 61-20335 [1961] 14p.

DESCRIPTORS: *Vinyl radicals, *Butyl radicals, *Ethers, *Polymerization, Catalysts, *Iron catalysts, Chlorides, Purification, Density, Refractive index, Viscosity.

Shostakovskii, M. F. and Sidel'kovskaya, F. P.
STUDIES IN THE FIELD OF THE POLYMERIZATION OF SIMPLE VINYL ETHERS: VINYL-ISOBUTYL ETHER (Issledovaniya v Oblasti Polimerizatsii Prostykh Vinilovykh Efirov: Vinil-Izobutilovyi Efir). [1963] [20p] (foreign text included) 7refs
Order from OTS or SLA $1.60 63-20181

Trans. of Zhurnal Obshchei Khimii (USSR) 1943, v. 13, no. 6, p. 428-435.
Abstract trans. is available from OTS or SLA $1.10 as 62-16830 [1962] 4p.

DESCRIPTORS: *Vinyl radicals, *Butyl radicals, Propyl radicals, *Ethers, Polymerization, *Catalysts, *Tin compounds, Chlorides, Density, Refractive index, Viscosity, Saponification, *Polyvinyl alcohol.

Signer, R. and Demagistri, A.
PREPARATION AND PROPERTIES OF POLYSTYRENE-SULFONIC ACIDS. [1963] 8p (figs formulae omitted)
Order from SLA $1.10 63-20160

Trans. of J[ournal] de Chim[ie] Physiq[ue] (France) 1950, v. 47, p. 704-707.

DESCRIPTORS: *Styrenes, Polymers, *Sulfonic acids, *Sulfonation, Synthesis (Chemistry), Electrolytes, Chemical properties, Viscosity.

Solodar, L. S. and Shevchenko, Z. N.
THE MECHANISM OF THE CHLOROSULFONATION OF ACYLANILIDES. [1963] 9p.
Order from ATS $12.00 ATS-68Q70R

Trans. of Zh[urnal] Prikl[adnoi] Khim[ii] (USSR) 1949, v. 22, no. 8, p. 874-881.

DESCRIPTORS: *Chlorosulfonic acid, Addition reactions

Sterligov, O. D. and Rozhkova, M. I.
CONTINUOUS ISOMERIZATION OF THE 2-METHYL-BUTENES-2 AND -1 [INTO] 3-METHYLBUTENE-1. [1963] [3]p. 3 refs.
Order from OTS or SLA $1.10 63-18846

Trans. of Neftekhimiya (USSR) 1962, v. 2, p. 288-290.

DESCRIPTORS: *Butenes, Methyl radicals, *Molecular isomerism, Synthesis (Chemistry), Catalysts, Aluminum compounds, Oxides, Fractionation, Polyethylene plastics.

The possibility of a continuous process for the synthesis of 3-methylbutene-1 is shown, based on the isomerization of the two other isoamylenes on active aluminum oxide and a subsequent fractionation in efficient laboratory columns. Process continuity was reached through combination of the isomerization and fractionation with a constant discharge of 3-methylbutene-1 formed to a general circulation system, which permitted production of high yields in this hydrocarbon. (Author)

Sugita, Tatsuo and Morimoto, Tsukio.
MANUFACTURE OF ETHANE TRICHLORIDE. [1963] [3p]
Order from OTS or SLA $1.10 63-20158

Trans. of Japanese patent 158,669 (public announcement no. 2734) cl. 145: Aliphatic compounds, appl. 22 Oct 42, announced 4 Jun 43, issued 2 Sep 43, by Dai-Nihon C Celluoid Kabushiki-kaisha Toto Furuya.

DESCRIPTORS: *Ethanes, *Chlorides, Synthesis (Chemistry), Liquids, Chlorine, Vinyl chlorides

Topchiev, A. V. and others.
RADIOLYSIS OF HYDROCARBONS. 1963, 220p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Radioliz Uglevodorodov, Moscow, 1962, 208p].

DESCRIPTORS: *Radiolysis, *Hydrocarbons, Pyrolysis, Reaction kinetics, Catalysis, Free radicals, *Radiation chemistry.

Topchiev, A. V. [Zavgorodnii, S. V., and Kryuchkova, V. G.].
ALKYLATION WITH OLEFINS. 1963, 325p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Reaktsiya Alkilirovaniya Organicheskikh Soedinenii Olefinami, Moscow, 1962, 323p].

DESCRIPTORS: *Alkylation, *Ethylenes, Carboxyl radicals, Benzenes, Phenols, Alkyl radicals, Synthesis (Chemistry), Oxidation, Catalysts, Peroxides.

Tsyskovskii, V. K. and Shcheglova, F. Ts.
THE EFFECT OF TEMPERATURE OF OXIDATION OF n-PARAFFINIC HYDROCARBONS ON THE DECOMPOSITION OF ALKYLHDROPEROXIDES. [1963] [7p] 9refs
Order from OTS or SLA $1.10 63-20014

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1961, no. 5, p. 325-326.

DESCRIPTORS: Hydrocarbons, *Alkanes, *Oxidation, Peroxides, Carbonyl radicals, Degradation, *Alcohols, Carboxylic acids, Esters, Molecular weight, Temperature.

Oxidation of n-decane, n-undecane, and n-tridecane, was conducted on a Mn naphthenate catalyst and in the presence of a boric acid esterification agent. Analysis of the oxidation products revealed that with increasing reaction temperatures, the content of primary alcohols in the mixture is reduced. The primary alcohol content stabilized at 10 to 15% with temperatures above 160°C. Temperature was also found to affect the point at which oxygen is added to the hydrocarbon chain, as was evidenced by the fact that the primary alcohols with the highest molecular weights were recorded at reduced temperatures.

Voluinkin, N. I.
PRODUCTION OF RESORCINOL. [1963] 3p (figs omitted) 2refs
Order from OTS or SLA $1.10 63-20324

Trans. of [Zhurnal Prikladnoi Khimii] (USSR) [1936] v. 9, no. 5, p. 885-888.
Another trans. is available in Dutch from OTS or ETC $1.55 as 61-17729, MTWL-124, 6p.

DESCRIPTORS: *Resorcinol, Synthesis (Chemistry), Crystallization

Volz.
ON THE PRODUCTION OF ACRYLIC ESTERS FROM ACRYLONITRILE. [1963] 2p
Order from OTS or SLA $1.10 63-20297

Trans. of unidentified mono. [issued by I. G. Farbenindustrie A.G., Leverkusen, 12 Mar 42]. (PB 74893)

DESCRIPTORS: *Acrylonitriles, *Saponification, *Acrylic acid esters, Production, Propionic acids, Chlorides.

Webel, Franz.
METHOD FOR THE PREPARATION OF 1,4-DIOXANE. [1963] 1p 1ref
Order from OTS or SLA $1.10 63-20320

Trans. of German patent 526,478, by I. G. Farbenindustrie A.G., 29 Mar 29.

DESCRIPTORS: *Dioxides, *Ethylenes, *Heterocyclic compounds, Synthesis (Chemistry).

Wittig, G.
FORMATION OF COMPLEXES AND REACTIVITY IN METAL-ORGANIC CHEMISTRY. [1963] 27p 45refs
Order from SLA $2.60 63-20300

Trans. of Angewandte Chemie (West Germany) 1958, v. 70, no. 3, p. 65-71.

DESCRIPTORS: *Metalorganic compounds, *Complex compounds, Chemical reactions, Polymerization.

The possibilities of the formation of metal-organic complexes are outlined and a comparison is made between the "ate"-complexes with their specific reactivity and the "onium - complexes". The preparative meaning, resulting from these considerations, is shown by some examples. Finally, the polymerizations stopped via "ate"-complexes are discussed, where π-complexes are of obvious importance. (Author)

Yakubovich, A. Ya. and Lemke, A. L.
THE STRUCTURE OF NITROSYL CHLORIDE AND ITS CONDENSATION REACTIONS WITH THE OLEFINS. [1963] [13p] 9refs
Order from OTS or SLA $1.60 63-20303

Trans. of #[Zhurnal Obshchei Khimii] (USSR) 1949, v. 19 [no. 4] p. 649-659.
A trans. in Dutch is available from OTS or ETC $1.85 as 61-32038, MTWL-375, 19p

DESCRIPTORS: *Nitrogen compounds, *Oxychlorides, *Condensation reactions, *Alkenes, Aldehydes, Propanes, Ethanes, Ethylenes, Chlorides,

The reactions of nitrosyl chloride with isobutylene, allyl chloride, vinyl chloride, vinylidene chloride, and trichloroethylene were investigated. The products obtained were: the dimer of the oxime of chloro-isobutyraldehyde; 1, 2-dichloro-3-nitropropane; 1, 1-dichloro-2-nitroethane; 1, 1-dichloro-2-nitroethylene; and 1, 1, 2, 2-tetrachloro-2-nitroethane. It was shown that in most cases the addition of nitrosyl chloride depends upon the polarity of the reacting ethylene and N--Cl bonds, the negative halogen attaching itself to the positive carbon atom, and the positive nitroso group attaching itself to the negative carbon atom. (Author)

Yanovskaya, L. A. Terent'ev, A. P., and Belen'kii, L. I.
BROMINATION WITH DIOXANE DIBROMIDE. PT. I. BROMINATION OF PHENOLS. [1963] 6p
Order from ATS $10.75 ATS-11Q72R

Trans. of #Zh[urnal] Obshch[ei] Khim[ii] (USSR) 1952, v. 22, p. 1594-1598.

DESCRIPTORS: *Phenols, *Bromination, Dioxides. Bromides.

Zabrodskii, A. G. and Vitkovskaya, V. A.
AMINO ACID-SUGAR (MELANOIDIN) REACTION AND ITS ROLE IN CHEMISTRY AND TECHNOLOGY OF FOOD PRODUCTS. [1963] [28]p. 73refs.
Order from OTS or SLA $2.60 63-18401

Trans. of Vsesoyuz[nyi] Nauch[no]-Issled[ovatel'skii] Inst[itut] Spirt[ovoi] i Likero-Vodoch[noi] Prom[yshlennosti]. Kiev[skii] Filial. Trudy (USSR) 1958, v. 4, p. 57-73.

DESCRIPTORS: *Amino acids, *Carbohydrates, *Food, Chemical reactions, Oxidation-reduction reactions, Physical properties, Proteins,

The reaction of amino acids with sugars is discussed with reference to the production of melanoidines in food products. The following topics are included: chemical nature, components, and physical characteristics of the Maillard reaction. The effect of the reaction on the nutritive value of food is noted. Various methods of analyzing the reaction are discussed.

Ziegler, K[arl] and Gellert, H. G.
ADDITION OF LITHIUM ALKYLS TO ETHYLENE. [1963] 18p (figs omitted) 18refs
Order from SLA $1.60 63-18956

Trans. of [Justus Liebigs] Ann[alen der Chemie] (West Germany) 1950, v. 567, p. 195-203.

DESCRIPTORS: *Ethylenes, *Alkyl radicals, *Lithium compounds, Additives, Pyrolysis, Chemical reactions.

Ziegler, K[arl] and Gellert, H. G.
REACTIONS BETWEEN LITHIUM ALKYLS AND ETHERS. [1963] 11p (figs omitted) 5refs
Order from SLA $1.60 63-18952

Partial trans. (p. 185-190) of [Justus] Liebigs Ann[alen der Chemie] (West Germany) 1950, v. 567, p. 185-195.

DESCRIPTORS: *Ethers, *Alkyl radicals, *Lithium compounds, Decomposition, Chemical reactions.

Ziegler, K[arl] and Gellert, H[ans]-G[eorg].
DETERMINATION OF THE "ACTIVITY" OF ORGANO ALUMINUM COMPOUNDS. Pt. 28 of Metalloorganic Compounds. [1961] 5p (figs omitted)
Order from K-H $5.00 K-H-10024-13

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 20-22.
Another trans. is available from SLA $1.10 as 61-20451 [1961] 5p.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Chemical analysis

For abstract see Technical Translations 7: 12, 1962.

Ziegler, K[arl] and Gellert, H[ans]-G[eorg].
REACTIONS BETWEEN LITHIUM ALKYLS AND ETHERS. Pt. 17 of [Research on Alkali Organic Compounds]. [1963] 10p (figs omitted)
Order from K-H $10.00 K-H-3456-h

Partial trans. (p. 190-195) of [Justus Liebigs] Annalen der Chemie (West Germany) 1950, v. 567, p. 185-195.

DESCRIPTORS: *Ethers, *Alkyl radicals, *Lithium compounds, Chemical reactions, *Alkali metal compounds

Ziegler, K[arl] and Jakob, L.
THE "CATALYSIS" OF THE POLYMERIZATION OF UNSATURATED HYDROCARBONS BY ALKALI ORGANIC COMPOUNDS, XII. [1963] 25p (figs omitted)
Order from K-H $25.00 K-H-3456-e

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) 1934, v. 511, p. 46-63.

DESCRIPTORS: *Organic compounds, *Hydrocarbons, Polymerization, *Catalysis, *Alkali metal compounds

Ziegler, Karl and Kroll, Wolf-Rainer.
DISPLACEMENT AND GROWTH REACTIONS IN DIALKYL Al COMPOUNDS OF THE R_2AlX TYPE. Pt. 35 of Metalloorganic Compounds. [1961] 8p.
Order from K-H $8.00 K-H-10024-16

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1960] v. 629, no. 1/3, p. 167-171.
Another trans. is available from SLA $1.10 as 61-20459 [1961] 8p.

DESCRIPTORS: Metallorganic compounds, *Aluminum compounds, *Alkyl radicals, Displacement reactions

Ziegler, K[arl] Crossmann, F., Kleinger, H., and Schafer, O.
REACTIONS BETWEEN UNSATURATED HYDROCARBONS AND ALKALI METAL ALKYLS. Pt. 1 of [Research on Alkali Organic Compounds]. [1963] 48p (figs omitted)
Order from K-H $48.00 K-H-3559-a

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) 1929, v. 473, p. 1-35.

DESCRIPTORS: *Alkyl radicals, *Alkali metal compounds, *Hydrocarbons, Chemical reactions

Ziegler, K[arl] Dersch, F., and Wollthan, H.
THE MECHANISM OF THE POLYMERIZATION OF UNSATURATED HYDROCARBONS BY ALKALI METALS AND ALKALI ALKYLS. Pt. 9 of [Research on Alkali Organic Compounds]. [1963] 50p (figs omitted)
Order from K-H $50.00 K-H-3456-f

Trans. of [Justus Liebigs] Annalen der Chemie (Germany) [1934] v. 511, p. 13-44.

DESCRIPTORS: *Alkyl radicals, *Alkali metal compounds, *Hydrocarbons, Polymerization

Ziegler, Karl, Gellert, Hans-Georg, Holzkamp, Erhard, Wilke, Günther, and Duck, Edward William.
[SYNTHESIS OF STRAIGHT-CHAIN α-OLEFINS FROM ETHYLENE]. Pt. 36 of Metalloorganic Compounds. [1961] 42p (figs omitted)
Order from K-H $42.00 K-H-10024-1

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 172-198.
Another trans. is available from SLA $4.60 as 61-20460 [1961] 42p.

DESCRIPTORS: Metalorganic compounds, *Butenes, Synthesis (Chemistry), *Ethylenes, *Aluminum compounds, *Alkyl radicals, Chemical reactions, Displacement reactions, Catalysts, Catalysis

Ziegler, Karl, Gellert, Hans-Georg, Lehmkuhl, H[erbert] Pfohl, Werner, and Zosel, K[urt].
[TRIALKYLALUMINUM AND DIALKYLALUMINUM HYDRIDES FROM OLEFINS, HYDROGEN, AND ALUMINUM]. Pt. 26 of Metalloorganic Compounds. [1961] 26p
Order from K-H $26.00 K-H-10024-11

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 1-13.
Another trans. is available from SLA $2.60 as 61-20449 [1961] 26p

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrides, *Alkyl radicals, Synthesis (Chemistry), *Ethylenes, *Hydrogen, *Aluminum, Chemical reactions

Ziegler, Karl, Gellert, Hans-Georg, Martin, Heinz, Nagel, Konrad, and Schneider, Josef.
REACTION OF THE ALUMINUM-HYDROGEN COMBINATION WITH OLEFINS. Pt. 19 of Metalloorganic Compounds. [1963] 56p (figs omitted)
Order from K-H $56.00 K-H-3215

Trans. of [Justus] Liebigs Annalen der Chemie (West Germany) 1954, v. 589, no. 2, p. 91-121.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrogen, *Ethylenes, Chemical reactions

Ziegler, Karl, Gellert, Hans-Georg, Zosel, Kurt, Holzkamp, Erhard, and Schneider, Josef.
REACTIONS OF THE Al-C BOND WITH OLEFINS. Pt. 34 of Metalloorganic Compounds. [1961] 74p (figs omitted)
Order from K-H $74.00 K-H-10024-2

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 121-166.
Another trans. is available from SLA $7.60 as 61-20458 [1961] 74p

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, *Ethylenes, Chemical reactions, Displacement reactions

Ziegler, Karl, Köster, Roland, Lehmkuhl, Herbert, and Reinert, Klaus.
NEW COMPLEX COMPOUNDS OF ALUMINUM ALKYLS. Pt. 30 [of] Metalloorganic Compounds. [1961] 29p (figs omitted)
Order from K-H $29.00 K-H-10024-9

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3, p. 33-49.
Other translations are available from SLA $2.60 as 61-20453 [1961] 29p; $1.60 as 61-20862 [1961] 14p; and from ATS $24.50 as ATS-01Q67G [Feb 63] 15p.

DESCRIPTORS: *Metalorganic compounds, *Complex compounds, *Aluminum compounds, *Alkyl radicals, Chemical reactions, Synthesis (Chemistry)

Ziegler, [Karl] Kroll, Wolf-R[ainer] Larbig, W[olfgang] Steudel, O[tto]-W[alter].
DISSOCIATION AND EXCHANGE REACTIONS OF THE ALUMINUM TRIALKYLS. Pt. 32 of Metalloorganic Compounds. [1961] 57p (figs omitted)
Order from K-H $57.00 K-H-10024-4

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. [53]-89.
Another trans. is available from SLA $5.60 as 61-20455 [1961] 57p.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Exchange reactions, Dissociation

Ziegler [Karl] Krupp [Felix] and Zosel [Kurt].
SYNTHESIS OF ALCOHOLS FROM ORGANOALUMINUM COMPOUNDS. Pt. 40 of Metalloorganic Compounds. [1961] 15p (figs omitted)
Order from K-H $15.00 K-H-10024-6

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 241-250.
Another trans. is available from SLA $1.60 as 61-20480 [1961] 15p.

DESCRIPTORS: *Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Oxidation, *Alcohols, Synthesis (Chemistry)

Ziegler, Karl, Krupp, F[elix] Weyer, K[laus] and Larbig, W[olfgang].
REACTIONS OF THE Al TRIALKYLS WITH CARBON DIOXIDE AND SULFUR DIOXIDE. Pt. 41 of Metalloorganic Compounds. [1961] 10p.
Order from K-H $10.00 K-H-10024-18

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) [1960] v. 269, no. 1/3, p. 251-256.
Another trans. is available from SLA $1.10 as 61-20463 [1961] 10p.

DESCRIPTORS: *Aluminum compounds, *Alkyl radicals, *Carbon dioxide, *Sulfur compounds, *Dioxides, Chemical reactions, *Carboxylic acids, *Sulfinic acids, Acids, Production, Metalorganic compounds

Ziegler, Karl, Martin, Heinz, and Krupp, Felix.
ALUMINUM TRIALKYLS AND DIALKYL ALUMINUM HYDRIDES FROM ISOBUTYL ALUMINUM COMPOUNDS. Pt. 27 of Metalloorganic Compounds. [1961] 8p
Order from K-H $8.00 K-H-10024-12

Trans. of [Justus] Liebigs Annalen [der] Chemie (West Germany) 1960, v. 629 [no. 1/3] p. 14-19.
Another trans. is available from SLA $1.10 as 61-20450 [1961] 8p

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Hydrides, *Alkyl radicals, *Butyl radicals, Synthesis (Chemistry), Chemical reactions.

Ziegler, Karl, Nagel, Konrad, and Pfohl, Werner.
PYROLYSIS OF Al TRIALKYLS. Pt. 38 of Metalloorganic Compounds. [1961] 19p.
Order from K-H $19.00 K-H-10024-3

Trans. of [Justus Liebigs] Annalen der Chemie (West Germany) 1960, v. 629, no. 1/3 [p. 210-221].
Another trans. is available from SLA $1.60 as 61-20462 [1961] 19p.

DESCRIPTORS: Metalorganic compounds, *Aluminum compounds, *Alkyl radicals, Pyrolysis

Physical Chemistry

Averhahn, Albert and Eisenhut, Otto.
PRODUCTION OF MERCURIC SULFATE SOLUTIONS BY ELECTROLYTIC MEANS. [1963] 2p
Order from OTS or SLA $1.10 63-20176

Trans. of German patent 544, 387 [1932].

DESCRIPTORS: Electrolytes, Solutions, *Sulfates, *Mercury compounds, Production.

Baroni, A.
ON THE LEAD OXYHALIDES. [1963] 5p (figs omitted) 7refs
Order from SLA $1.10 63-18210

Partial trans. (p. 384-388) of Accad[emia Nazionale dei] Lincei [Rome]. [Classe di Scienze, Fiziche, Mathematiche e Naturali. Rendiconti] (Italy) 1934, ser. 6, v. 20, p. 384-390.
A complete trans. is available from SLA $1.60 as 63-16022 [1963] 12p.

DESCRIPTORS: *Oxyhalides, *Lead compounds, Phase studies, Fused materials.

Bartenev, G. M. and Zakharenko, N. V.
THE VISCOSITY AND FLOW MECHANISM OF POLYMERS WITH DISPERSE FILLERS, tr. by Ingeborg V. Baker. 2 Sep 63 [18p] 19refs RSIC-51.
Order from OTS or SLA $1.60 63-23945

Trans. of #Kolloidnyi Zhurnal (USSR) 1962, v. 24, no. 2, p. 121-127.
Another trans. is available from ATS $10.75 as ATS-49P63R [1962] 8p.

DESCRIPTORS: *Polymers, Viscosity, Creep, *Fillers, Rubber, Carbon black, Butenes, Butadienes, Heat of activation, Elasticity,

The viscosity of filled, rubber-like, polymer mixtures, with carbon black comprising less than 10-15% of the volumetric contents complies with Einstein's suspension formula if it is considered that the sizes of the effective dispersed particles are larger than the sizes of the carbon black particles themselves, or their aggregates caused by a polymer layer bonded to them. An adsorbed polymer layer on the particles of the active filler forming a unit with each particle is caused by chemical forces of adhesion between the rubber and the active filler together with Van-der-Waals' forces of cohesion. The activation of a filler to a given polymer is determined by the number ratio of chemical and Van-der-Waals' coherences on a unit of a filler surface. The introduction of a disperse filler into a polymer leads to a drastic increase of viscosity without a change in its temperature coefficient. This permits the viscosity of the materials to be regulated with a change of the temperature coefficient. The molecular flow mechanism of the filled mixtures is basically the same as that for pure polymers. The activation energy of viscous flow is invariant not only in stress and in the molecular weight of a polymer but also in the quantity of a active filler in the mixture.

Burshtein, R. Kh., Pshenichnikov, A. G., and Shumilova, N. A.
THE MECHANISM OF OPERATIONS OF DIFFUSION ELECTRODES [1963] [5]p. 4 refs. [DSIR] NLL M.10082.
Order from OTS or SLA $1.10 63-23358

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 6, p. 1409-1412.

DESCRIPTORS: *Electrodes, Transport properties, Diffusion, Electrolysis, Gases, Pressure, Porosity, Nickel, Ammonium compounds, Carbonates, Powders, Carbonyl radicals, Electrolytes, Electrochemistry,

The narrow pores of a porous gas electrode retain the electrolyte and serve to supply electrolyte to the wide pores. Electro-chemically active gases entering the wide pores freed from electrolyte are adsorbed on their surfaces and their respective reduction or oxidation take place near the narrow pores. Optimum electrochemical activity is observed when there is a definite relationship between the total cross-section of narrow pores and the surface of the wide pores.

Delarue, Guy.
CHEMICAL PROPERTIES IN THE FUSED LiCl-KCl EUTECTIC MIXTURE. II. SULFUR, SULFIDES, SULFITES, SULFATES. [1963] [11p] 5refs
Order from SLA $1.60 63-20232

Trans. of Societe Chimique de France. Bulletin, 1960, no. 5, p. 906-910.

DESCRIPTORS: *Sulfates, *Sulfites, *Sulfides, *Sulfur, Mixtures, *Eutectics, Fused materials, Chlorides, Potassium compounds, Lithium compounds, *Chemical properties.

A qualitative study was made of the behavior of sulfur, sulfides, sulfites, and sulfates in the fused LiCl-KCl eutectic mixture, and a certain number of oxidation-reduction reactions which permit to transform one of these compounds into another one. (Author)

Delarue, Guy.
CHEMICAL REACTIONS INVOLVING THE O^{-2} AND S^{-2} IONS IN MOLTEN LiCl-KCl EUTECTIC. [1963] [12p] 5refs
Order from SLA $1.60 63-20233

Trans. of Societe Chimique de France. Bulletin 1960, no. 8/9, p. 1654-1659.

DESCRIPTORS: *Eutectics, Chemical reactions, Chlorides, Lithium compounds, Potassium compounds, Oxides, Sulfides, Oxidation, Solubility, *Oxidation-reduction reactions, Fused materials.

The variations in oxidation-reduction properties with the O^{-2} and S^{-2} ion concentration in the molten mixture allow the anticipation of a certain number of chemical reactions. Among others, the dissolution of only slightly soluble oxides and sulfides by the action of oxidants such as Cu^{+2}, Fe^{+3}, Au^{+}, Cl_2 can be proven. Likewise, it was ascertained some reactions in which complexes of O^{-2} with SO_3 and H^{+} are formed. (Author)

Efimov, E. A. and Erusalimchik, I. G.
ELECTROCHEMISTRY OF GERMANIUM AND SILICON. Oct 63, approx. 199p.
Order from Sigma Press, Publishers, 2124 Pennsylvania Ave., N. W., Washington, D. C. $11.00

Trans. of mono. Elektrokhimiya Germaniya i Kremniya, Moscow, 1963.

DESCRIPTORS: *Silicon, *Germanium, *Electrochemistry.

Freidlin, L. Kh., Kaup, Yu. Yu., and Litvin, E. F.
INVESTIGATION ON n-HEXENES HYDROGENATION AND ISOMERIZATION IN THE PRESENCE OF A SKELETON NICKEL CATALYST. [1963] [6]p. 15 refs.
Order from OTS or SLA $1.10 63-18835

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962, no. 8, p. 1464-1467.

DESCRIPTORS: *Hexenes, *Hydrogenation, Reaction kinetics, *Molecular isomerism, *Stereochemistry, Chemical bonds, *Catalysts, *Nickel catalysts.

The hydrogenation rates of β- and γ-hexenes on skeleton nickel catalyst at 20°C are mutually close, but significantly below the hydrogenation rate of the α-hexene. The hydrogenation of n-hexenes is accompanied with their cis-trans rearrangement and double-bond migration, whereby the relative content of catalyzate isomers approaches an equilibrium. The cis and trans-isomers of hexene-2 and hexene-3 are hydrogenated non-selectively in their mixtures. (Author)

Gerischer, H.
CATALYST SUSPENSIONS AS CURRENT CARRIERS IN ELECTROCHEMICAL PROCESSES. 20 Jun 63 [9p] 11refs
Order from SLA $1.10 63-18937

Trans. of [Zeitschrift für Elektrochemie] (West Germany) 1963, v. 67, p. 164-167.

DESCRIPTORS: *Electrochemistry, *Fuel cells, *Catalysts, Electrical conductance, Electrodes, Hydrogen, Oxidation, Oxygen, Reduction (Chemistry)

It is shown, by the examples of the oxidation of hydrogen and reduction of oxygen, that considerable currents can be drawn from catalyst suspensions that catalyze these reactions in an electrolyte solution. It thus becomes possible to avoid the usual coupling between the catalytic and current-carrying functions of an electrode in electrochemical processes. (Author)

Gillis, J. and Delaunois, A.
SOLIDIFICATION POINTS, BOILING POINTS, INDICES OF REFRACTION AND DENSITIES OF THE SYSTEM: WATER-DIOXANE-1.4. [1963] [3p] (figs omitted) 7refs
Order from SLA $1.10 63-20330

Trans. of Recueil des Travaux Chimiques des Pays-Bas (Netherlands) 1934, v. 53, p. 186-190.

DESCRIPTORS: *Water, *Ethylenes, *Dioxides, Heterocyclic compounds, Density, Boiling, Refractive index, Solvents, Phase studies, *Organic solvents.

Gobrecht, Heinrich and Meinhardt, Oskar.
ON THE IMPEDENCE OF SEMICONDUCTOR-ELECTROLYTE INTERFACES, PT. I. CAPACITANCE AND CONDUCTANCE OF Ge AND Si ELECTRODES. (Über die Impedanz von Halbleiter-Elek rolyt-Grenzflächen. Mitteilung I. Kapazität und Leitwert von Germanium- und Silizium-Elektroden). [1963] [23p] (foreign text included) 16refs
Order from SLA $2.60 63-18759

Trans. of Deutsche Bunsengesellschaft für Physikalische Chemie e.V., Münster. Bericht (West Germany) 1963, v. 67 [no. 2] p, 142-151.

DESCRIPTORS: *Electrodes, *Germanium, *Silicon, Electrolytes, Capacitance, Electrical conductance, *Semiconductors, Electrical impedance, Surface properties, *Electrochemistry.

The behavior of semiconductor-electrolyte interfaces can be described by an equivalent circuit consisting of a capacitance and a conductance in parallel. On n-type germanium and p-type silicon of various conductivities these two quantities were measured as a function of the electrode potential. In the reverse direction the impedance is given by a Schottky-barrier. Under equilibrium conditions nearly intrinsic samples show a strongly marked minimum of the capacitance and the conductance. For samples of higher conductivity this minimum can be obtained only if the number of minority carriers is increased by injection (by means of a p-n junction, redox agents, light, or increase of temperature). In the forward direction the results can be explained if the existence of an enrichment layer with carrier degeneration at the surface is assumed. The dependence of capacitance on bias has been calculated for n-type germanium at five levels of conductivity. (Author)

Gobrecht, Heinrich, Meinhardt, Oskar, and Schulz, Ludwig.
ON THE BEHAVIOR OF SEMICONDUCTOR ELECTRODES WITH TWO ELECTROLYTE CONTACTS (Über das Verhalten von Halbleiterelektroden mit Zwei Elektrolytkontakten). [1963] [21p] (foreign text included) 12 refs
Order from SLA $2.60 63-18758

Trans. of Deutsche Bunsengesellschaft für Physikalische Chemie e.V., Münster. Bericht (West Germany) 1963, v. 67, no. 2, p. 156-164.

DESCRIPTORS: *Semiconductor devices, *Electrodes, Germanium, Electrolytes, *Electrochemistry, Surface properties, Recombination reactions, Tests.

By means of a thin-slice technique the mutual influence of two circuits on a semiconductor electrode was investigated in order to clarify which type of carriers governs a certain reaction. It follows therefrom, that due to the electrochemical reaction the concentration of the minority carriers is changed by injection or by extraction and also by recombination or generation (dependent on the current direction). Both influences take place simultaneously as could be shown under stationary conditions and by an impulse technique similar to the Shockley-Haynes experiment. By varying the sample thickness, and the height and duration of the pulses it could be proved that the delayed pulses in the second circuit were caused by the diffusion of minority carriers. A calculation is given in the appendix. The measurements were performed on n- and p-type germanium of various ^{O} conductivities in aqueous solutions of KOH, H_2SO_4, and $K_3Fe(CN)_6$. (Author)

Gutman, S. M., Rehbinder, P. A., Lipetz, M. E., and Rimskaya, M. M.
COLLOIDAL PHYSICO-CHEMICAL METHODS FOR THE SEPARATION FROM THE CARBIDES, OF SLAG INCLUSIONS PRECIPITATED FROM STEEL, tr. by Geo. H. Davison. Jun 44 [7p] 15refs USCL T. no. 1793; [BISI] Trans. 183; [DSIR] NLL M.3418.
Order from OTS or SLA $1.10 62-24829

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1935, v. 1, 11 Feb, p. 308-312.

DESCRIPTORS: *Steel, Chemical precipitation, *Slags, *Carbides, Separation, Physical chemistry, Colloids, *Inclusions (Metallurgy).

Hansen, M.
K-Pb EQUILIBRIUM DIAGRAM. [1963] 2p (figs omitted) 4refs
Order from SLA $1.10 63-18226

Trans. from mono. Der Aufbau der Zweistofflegierungen [Berlin, 1936].

DESCRIPTORS: *Potassium, *Lead, *Chemical equilibrium, Alloys, Chemical compounds, Calorimeters.

Jaeger, F. M. and Kapma, B.
EXACT MEASUREMENT OF ELECTRICAL CONDUCTIVITY OF ELECTROLYTES AT TEMPERATURES UP TO 1600°C. [1963] 43p (figs omitted) 52refs
Order from SLA $4.60 63-20463

Trans. of Z[eitschrift für[Anorg[anische und] Allgem[eine] Chem[ie] (Germany) 1920, v. 113, p. 27-58.

DESCRIPTORS: *High temperature research, *Electrolytes, *Electrical conductance, Measuring devices (Electrical and Electronic), Electrochemistry, Metals, Salts.

Kazanskii, V. B. and Pecherskaya, Yu. I.
CHANGES IN ESR SPECTRA OF CHROMIA-ALUMINOSILICATE CATALYSTS FOR ETHYLENE POLYMERIZATION, INDUCED BY REACTION COMPONENTS. [1963] [9]p. 15 refs.
Order from OTS or SLA $1.10 63-18751

Trans. of Kinetika i Kataliz (USSR) 1963, v. 4, p. 244-251.

DESCRIPTORS: *Ethylenes, *Chromium catalysts, *Alumina-silica catalysts, *Catalysis, *Spectroscopy, Heptanes, Cyclohexanes, *Electron spin resonance, Polyethylene plastics, Polymerization,

Changes of the narrow signal in ESP spectra of chromia-aluminosilicate catalyst for ethylene polymerization were investigated, while induced by effects of water, ethylene, heptane and cyclohexane. They were explained through adsorption of these substances on Cr^{5+} ions. Further study of the ESR spectrum from a catalyst, enriched with isotope Cr^{53}, indicated likewise that the narrow signal was caused by Cr^{5+} ions. (Author)

Keyer, N. P., Boreskov, G. K. and others.
CATALYTIC ACTIVITY OF ORGANIC POLYMERS. III LAW OF CATALYZING ON CHELATE POLYMERS OF VARIOUS CHEMICAL COMPOSITION AND STRUCTURE. 21 June 63 [19]p. 8 refs. FTD-TT-63-414.
Order from OTS or SLA $1.60 63-23824

Unedited rough draft trans. of Kinetika i Kataliz (USSR) 1962, v. 3, no. 5, p. 680-690.

DESCRIPTORS: *Polymerization, *Catalysts, *Metalorganic compounds, *Chelate compounds, *Copper catalysts, *Iron catalysts, *Nickel catalysts, *Zinc compounds, Manganese compounds.

The laws governing catalytic activity of polychelates of various metals, differing in composition of addenda atoms connected with the metal in the chelate unit, were investigated. It was revealed, that catalytic activity is determined by the metal, included in the chelate unit, nature of atoms, connected with the metal, and the nature of organic radicals in the polymer. Monomeric analogues of a number of polymers are catalytically inactive. No relationship was discovered between catalytic activity and electric conductivity. (Author)

Kobayashi, T. and Kitahara, A.
STUDY OF THE ADSORPTION OF A SURFACTANT ON CARBON BLACK SUSPENDED IN A NONAQUEOUS MEDIUM. [1963] 4p.
Order from ATS $5.50 ATS-61Q71J

Trans. of Nihon Kagaku Zasshi (Japan) 1962, v. 83, no. 10, p. 1158-1159.

DESCRIPTORS: *Surface-active substances, Adsorption, *Carbon black, Solutions.

Menzel, Waldemar.
ON ORGANO-ALUMINUM COMPOUNDS AND THEIR USE IN THE ELECTROLYTIC DEPOSITION OF ALUMINUM, I. [1963] 24p
Order from K-H $24.00 K-H 3736-a

Trans. of Zeitschrift für Anorganische und Allgemeine Chemie (East Germany) 1952, v. 269, p. 52-66.

DESCRIPTORS: Organic compounds, Aluminum compounds, *Electrodeposition, *Aluminum coatings.

Milone, Mario and Borello, Enzo.
INFRARED ABSORPTION SPECTRA OF SOME ISOMERIC HEPTACHLOROCYCLOHEXANES AND OCTACHLOROCYCLOHEXANES. [1963] 10p (figs omitted) 6refs
Order from SLA $1.10 63-18986

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1952, v. 82, p. 79-85.

DESCRIPTORS: *Cyclohexane derivatives, *Chlorides, *Spectra (Infrared), Absorption spectrum, *Molecular isomerism, Physical properties.

The infrared absorption spectra from 2 to 15 μ are reported for 1,1,2,3,4,5,6-heptachlorocyclohexanes with melting points of 146° and 260° and for 1,1,2,3,4,4,5,6-octachlorocyclohexanes with melting points of 90° and 263°. A qualitative comparison was made of the spectra of these compounds with those of monochlorobenzene and o- and p-dichlorobenzenes, and some relationships are shown between spectra and physical properties (melting point and solubility). (Author)

Nozaki, Hiroshi.
ELECTROLYSIS OF FUSED SALTS, PTS. 1-2. [1963] [15p]
Order from SLA $1.60 63-20465

Trans. of [Denki Kagaku] (Japan) 1948, v. 16, p. 31-36.

DESCRIPTORS: *Fused materials, Salts, *Electrolysis, Aluminum compounds, Oxides, Chemical reactions, Electrochemistry, Metals, Mixtures.

Contents:
Voltaic reaction between a metal and its salt
A discussion of the voltain effect in a mixture of a metal and a salt, and the relationship between the voltaic effect and electrolysis.

Nozaki, Hiroshi.
ELECTROLYSIS OF FUSED SALTS. PT. 3. ELECTROLYSIS OF FLUORIDES OF ALUMINUM AND SODIUM. [1963] [11p]
Order from SLA $1.60 63-20466

Trans. of [Denki Kagaku] (Japan) 1948, v. 16, p. 15-16.

DESCRIPTORS: *Fused materials, Salts, *Electrolysis, Sodium compounds, Aluminum compounds, Fluorides, Chemical reactions.

(See also 63-20465)

Pahenitsen, P. A. and Lavrovich, O. S.
NEW ELECTROLYZER FOR ELECTROLYTICAL DECOMPOSITION OF ALKALI SALTS (Novyi Elektrolizer dlya Elektroilitichesogo Razlozheniya Shchelochnykh Solei). [1963] [5]p. (foreign text included) 2 refs
Order from OTS or SLA $1.10 63-18120

Trans. of Zavodskaya Laboratoriya (USSR) [1938] v. 7, p. 622-623.

DESCRIPTORS: *Electrolysis, Decomposition, *Alkali metal compounds, Centrifugal pumps, Mercury, Sodium compounds, Silicates, Salts,

Palous, S. and Buvet, R.
REDUCTION OF OXYGEN AT FUEL CELL ELECTRODES AT LOW TEMPERATURE. I. REDUCTION AT A TRIPLE CONTACT LINE: ELECTRODE-ELECTROLYTE-GAS. II. STUDY OF THE REDUCTION OF OXYGEN DISSOLVED AT AMBIENT TEMPERATURE. [1963] 6p
Order from SLA $1.10 63-20357

Trans. from mono. (papers) presented at the Chemical Society, France, n.d.

DESCRIPTORS: *Oxygen, *Reduction (Chemistry), Fuel cells, Electrodes, Gold, Platinum, Polarographic analysis, Electrochemistry.

Pionetelli, R.
PRINCIPLES AND EXAMPLES OF APPLICATION OF NEW DEVICES FOR MEASURING OVERVOLTAGES, I. [1963] 21p (figs omitted)
Order from K-H $21.00 K-H-5035-b

Trans. of Zeitschrift für Elektrochemie (West Germany) 1955, v. 59 [no. 7/8] p. 778-784.

DESCRIPTORS: *Measuring devices (Electrical and electronic), Electrochemistry.

Rodigin, N. M. and Rodigina, E. N.
CONSECUTIVE CHEMICAL REACTIONS: MATHEMATICAL ANALYSIS AND ESTIMATION. 1963, 140p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Posledovatel'nye Khimicheskie Reaktsii: Matematicheskii Analiz i Raschet, Moscow, 1960, 138p].

DESCRIPTORS: *Reaction kinetics, *Chemical reactions, Mathematical analysis.

Roginskii, S. Z. and Yanovskii, M. I.
THE THEORY OF CHROMATOGRAPHY ON HETEROGENEOUS SURFACES. I. DETERMINATION FROM DESORPTION CURVES OF THE FUNCTION EXPRESSING THE DISTRIBUTION WITH RESPECT TO THEIR HEATS OF ADSORPTION OF SITES ON A SOLID SURFACE. [1963] [7p] 10refs
Order from OTS or SLA $1.10 63-20302

Trans. of #[Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya] 1952, no. 1, p. 59-[63].

DESCRIPTORS: *Chromatorgaphic analysis, *Adsorbents, Surface properties, *Thermochemistry, Graphic analysis,

The effect of energetic inhomogeneity of the surface on the character of the dynamic desorption curves in chromatographic analysis was analyzed. The relation between the form of desorption curves $\varsigma = \varsigma(V)$ and the

form of the function expressing the distribution with respect to their heats of adsorption of sites on the surface $\rho(Q)$ was obtained. A method is given for the construction of $\rho(Q)$ from desorption curves without having recourse to special adsorption measurements. The equations of desorption curves for the fundamental forms of distribution are obtained. The limits and conditions of applicability of the proposed method are pointed out. (Author)

Roginskii, S. Z. and Yanovskii, M. I.
THE THEORY OF CHROMATOGRAPHY ON HETEROGENEOUS SURFACES COMMUNICATION. 3 DYNAMICS OF THE ADSORPTION OF MIXTURES ON HETEROGENEOUS SURFACES. [1963] [12p] 10refs
Order from OTS or SLA $1.60 63-20304

Trans. of #[Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya] 1952, no. 1, p. 64-[73].

DESCRIPTORS: *Chromatographic analysis, Surfaces, *Adsorption, Mixtures, Mathematical analysis.

The effect of the heterogeneity of the adsorbent on the dynamics of the adsorption of a mixture of two substances was investigated. It was shown that there is a possibility of sudden transitions from one course of dynamic adsorption to another at definite critical values of c, c_1/c_2, and T. The conditions required for complete separation of a binary mixture at a heterogeneous surface were established. The ideas that were brought forward are primarily interesting for the dynamics of the adsorption of mixtures at low saturations of the surface, for which heterogeneity is most strongly marked. (Author) (See also 63-20302)

Samarin, A. M. and Shvartsman, I. A.
IONIC NATURE OF MELTS AND SOLUBILITY OF OXIDES AND SULFIDES THEREIN. [1963] 10p
Order from K-H $10.00 K-H 5141 a

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1946, v. 20, no. 2, p. 189-193.

DESCRIPTORS: *Sulfides, *Oxides, Solubility, Melting, Ions.

Shakhverdov, P. A. and Terenin, A. N.
INVESTIGATION OF INTERMOLECULAR ELECTRON TRANSFER IN TETRAPYRROLE PIGMENTS DURING PULSED ILLUMINATION. 21 Oct 63, 6p 11refs
JPRS: 21519.
Order from OTS $0.50 63-31971

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 150, no. 6, p. 1311-1314.

DESCRIPTORS: *Organic pigments, *Dyes, *Pyrroles, *Magnesium compounds, *Phthalocyanines, *Porphyrins, *Photochemistry, Reduction (Chemistry), Electromagnetic pulses, *Absorption spectrum, Phenols, Phosphates, Phenyl radicals, Benzene derivatives, Amines.

A study was made of the absorption spectra, in the presence of pulsed illumination, of magnesium phthalocyanine with phenol and benzidine reducing agents, and of hematoporphyrin with diphenylamine and triphenylamine reducing agents. Because the radicals and positive-ion radicals of the reducing agents have spectra in the accessible region, plots of the relative change of transmittance of the solutions as a function of the photoimpulse wave length permitted a distinction to be made between the transfer of hydrogen atoms and the transfer of electrons in these primary photoreduction reactions.

Smirnov, M. V. and Ivabovskii, E. E.
THE DECOMPOSITION POTENTIAL OF FUSED LEAD AND THORIUM CHLORIDES. [1963] 12p (figs omitted)
Order from K-H $12.00 K-H-8024-b

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1957, v. 31 [no. 2] p. 467-473.

DESCRIPTORS: *Chlorides, *Thorium compounds, *Lead compounds, Fused materials, Decomposition

Staab, Heinz A. and Mannschreck, Albrecht.
PROTON RESONANCE AND PROTON EXCHANGE IN DIAZOLES. [1963] [4p] 2refs
Order from SLA $1.10 63-20016

Trans. of [Tetrahedron Letters (U. S.) 1962, no. 20, p. 913-916].

DESCRIPTORS: *Azoles, *Imidazoles, *Pyrazoles, *Indoles, *Nuclear magnetic resonance, Protons, *Resonance, *Solvents, Sulfuric acid.

Thinius, K[urt].
THE EUCOLLOID SYSTEM AND PLASTICIZERS, I. [1963] 28p
Order from K-H $28.00 K-H 5309 f

Trans. of Kunststoffe Technik [sic] 1952, v. 4, no. 10, p. 471-476.

DESCRIPTORS: *Plasticizers, *Colloids, Valence.

Tolstopyatova, A. A., Balandin, A. A., and Pyn, Bi-syan.
KINETICS OF DEHYDROGENATION AND DEHYDRATION OF ISOPROPANOL AND OF DEHYDROGENATION OF TETRALIN ON DYSPROSIUM OXIDE. [1963] [13p] 7refs
Order from OTS or SLA $1.60 63-20203

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1962, no. 7, p. 1154-1163.

DESCRIPTORS: *Propanols, *Naphthalenes, *Dehydrogenation, *Dehydration, Reaction kinetics, Catalysts, *Dysprosium compounds, Oxides, *Thermochemistry, Heat of activation, Adsorption.

The kinetics investigated agree with the Balandin equation for monomolecular, heterogeneous catalytic reactions. Heats of adsorption of the products water, acetone, and hydrogen are greater, while of propylene it is smaller, than the adsorption heat of isopropanol. Heats of adsorption of naphthalene and hydrogen are smaller, than the adsorption heat of tetralin. The values found for thermodynamic functions of the adsorptive displacements were mentioned. Bond energies of C, H and O with Dy_2O_3 were determined from the real activation energies found. (Author)

Veselov, V. V., Pedayas, V. M., and Alekseenko, E. V.
HEAT STABILITY OF THE BORATES OF SECONDARY HIGH-MOLECULAR-WEIGHT ALCOHOLS. [1963] [13p] 4refs
Order from OTS or SLA $1.60 63-20003

Trans. of Nauchno-Issledovatel'skii Institut Sinteticheskikh Zhirozamenitelei i Moyushchikh Sredstv. Trudy (USSR) 1961, v. 2, p. 33-38.

DESCRIPTORS: *Borates, *Alcohols, Pyrolysis, Esters Alkyl radicals, Hydrocarbons, Aliphatic compounds, Boric acids, Heat, Stability, Molecular weight

The heat stability and several other properties of borates of higher secondary alcohols were studied. Boric acid esters corresponding to the composition of monoalkylborates are shown to be least stable to heat. Dialkylborates are more stable, and trialkylborates are especially stable. It is recommended that in separating hydrocarbons from alcohols by converting the latter to borates, one should avoid the use of an excess of boric acid in esterification and achieve the necessary degree of esterification by more complete removal of the reaction water under a vacuum. (Author)

Vetter, K[laus] J.
ELECTROCHEMICAL KINETICS. 1963, 800p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified German mono. [pub. by Springer Verlag, Berlin, 1961].

DESCRIPTORS: *Electrochemistry, *Reaction kinetics, *Electrolysis, Thermodynamics, Oxidation-reduction reactions, Corrosion, Passivity, Metals, Electric potentials, Diffusion.

Yakimenko, L. M., Kokhanov, G. N. and others.
INVESTIGATION INTO THE ELECTRO-CHEMICAL BEHAVIOR OF TITANIUM AND SEVERAL OTHER METALS DURING THE ELECTROLYSIS OF CHLORIDE SOLUTIONS (Issledovanie Elektrokhimicheskogo povedeniya Titana i Nekotorykh Drugikh Metallov pri Elektrolize Khloridnykh Rastvorov). July 63 [12]p. 26 refs. RTS-2277.
Order from OTS or SLA $1.60 63-23234

Trans. of Khim[icheskaya] Promyshlennost' (USSR) 1962, no. 1, p. 43-47.

DESCRIPTORS: Solutions, Chlorides, Electrolysis, Metals, *Titanium, *Electrochemistry.

Research was conducted into the electro-chemical behaviour of Ti, Zr, Nb, Ta, Mo, W and several titanium alloys and compounds, during anodic polarisation in 300 g/1 solutions of sodium chloride at 80°C. It was shown that, by changing the chemical composition of the surface layer on a titanium electrode, it is possible to make some increase in the amount of current used in the process of chlorine separation. Titanium, tantalum and niobium can be used as unprotected leads to platinum, graphite and other electrodes in the electrolysis of solutions containing chloride ions. (Author)

Yoshitomi, Suehiko, Morita, Yoshiro, and Yamamoto, Kenichi.
REACTION OF PURE HYDROCARBONS AND STEAM, Pt. 3 of Reaction of Petroleum [on Water Vapor]. [1963] 32p 11refs
Order from SLA $3.60 63-20476

Trans. of [Kogyo Kagaku Zasshi (Japan) 1960, v. 63, no. 12, p. 2134-2140].

DESCRIPTORS: *Steam, *Hydrocarbons, *Catalysts, *Petroleum, Reaction kinetics, Pyrolysis, Statistical data.

There was found difference between the reactions of hydrocarbons and steam with neutral and basic catalysts, and neutral catalysts showed a better catalytic effect. As for the composition of gaseous product in the case of neutral catalysts, the sum of hydrogen and carbon monoxide amounted to 80~90% and it was not largely influenced by reaction temperatures. In the case of basic catalysts, yields of hydrocarbons were high, and the results were similar to those in thermal cracking. The reactivities of hydrocarbons in a homologous series decreased with the number of carbons in hydrocarbons in the case of neutral catalysts but increased in the case of basic catalysts. In the case of aromatic hydrocarbons, a similar trend in the reactivities were observed with both kinds of catalysts, and those with longer side chains were more reactive. The dehydrogenation reaction was remarkably accelerated by the use of neutral catalysts, while the demethylation and the dehydrogenation reactions proceeded nearly simultaneously in the case of basic catalysts. The standard free energy and the equilibrium constant of the reaction with steam were calculated from temperature-dependent equations for the standard free energy of formation of hydrocarbons. (Author) (See also 63-20358)

Zenkevich, Yu. V. and Dement'ev, B. G.
KINETICS OF THE DISSOLUTION OF SILICA IN STEAM. [1963] [12p] 8refs C. E. Trans. 3008.
Order from OTS or SLA $1.60 63-23978

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 10, p. 26-31.

DESCRIPTORS: *Steam, *Silicon compounds, *Dioxides, *Reaction kinetics, Fluosilicic acids, Solubility, Quartz, Temperature, Pressure.

Results are presented of an experimental investigation of the kinetics of the dissolution of silica in superheated steam at pressures of up to 92 ata. Two types of flow reactors, one with quartz tubes and the other with a filling of crushed vitreous quartz, were used. The use of an equation for the kinetics of the dissolution process demonstrated that the equilibrium silica contents of steam are different in the case of contact with vitreous quartz and with crushed vitreous quartz. A good agreement was found between the equilibrium concentrations of silicic acid in steam, obtained from the kinetic solubility curves of crushed vitreous quartz in superheated steam, and the solubility figures for amorphous silica, calculated from the equation:

$$\text{Log } Z = n \log \gamma - \frac{2330}{T} + 2.36.$$

Zhukov, I. I. and Fridrikhsberg, D. A.
VARIATION OF THE TRANSFER NUMBERS OF IONS IN POROUS DIAPHRAGMS. [1963] 28p 7refs
Order from OTS or SLA $2.60 63-18998

Trans. of Kolloidnyi Zhurnal (USSR) 1949, v. 11, p. 395-409.

DESCRIPTORS: *Porous materials, *Diaphragms (Mechanics), *Colloids, Ceramic materials, *Ions, *Transport properties, Kinetic theory, *Electrical double layer, Electrical conductance, Surface properties, *Electroosmosis, *Electrodialysis, Electrolysis.

The relation between transfer numbers and surface conductivity is derived and is confirmed by the experimental data on collodion and ceramic diaphragms in solutions. The theoretical consequence of the rectilinear relationship between the quantity $\frac{1}{\lambda}$ and the specific electrical conductivity of a solution is confirmed experimentally. It is shown that the surface conductivity is accomplished principally (more than 90%) by the cations of the double electric layer. The expressions found for the function $n_k = f(c, r)$ permit one to compute the transfer number for any given values of the concentration of the solution and of the pore radius without resorting to experiment, if the values of $\underline{K}$ and t_k are known for a given type of surface of separation. (Author)

EARTH SCIENCES

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 310 (EARTH SCIENCES SERIES). 3 Oct 63, 6p JPRS: 21310.
Order from OTS $0.50 63-31875

Abstract trans. of Ceskoslovenska Spolecnost Zemepisn Zemepisna. Sbornik, 1963, v. 68, no. 3, p. 203-270, 277-278.

DESCRIPTORS: *Abstracts, *Geophysics, Czechoslovakia, Climatology, Urban areas, Mapping, Geography, Rivers, Transportation, Terrain, Copper, Africa, Conferences, Poland.

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 140, NOS. 1-6. Mar 63, 1v
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 1, p. 103-107ff, 181-217; no. 2, p. 354-364, 427-460; no. 3, p. 571-594, 655-691; no. 4, p. 807-810, 889-930; no. 5, p. 1058-1065, 1138-1177; no. 6, p. 1397-1422.

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Mineralogy, *Paleontology, *Petrology,

DOKLADY OF THE ACADEMY OF SCIENCES OF THE USSR, EARTH SCIENCES SECTION, 1961, VOL. 141, NOS. 1-6 AND INDEX VOLS. 136-141. Mar 63, 1v
Order from AGI $8.00, $45.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 141, no. 1, p. 74-80, 177-204; no. 2, p. 425-452, 457-460; no. 3, p. 683-722; no. 4, p. 925-961; no. 5, p. 1078-1082, 1163-1203, 1211-1213; no. 6, p. 1350-1352, 1429-1464.

DESCRIPTORS: *Geochemistry, *Geology, *Geophysics, *Hydrology, *Stratigraphy, *Minerology, *Paleontology, Petrology.

SOVIET ANTARCTIC EXPEDITION, VOLS. 1-3. 1963, 3v.
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d. in 3 vols.

DESCRIPTORS: *Antarctic regions, *Oceanology, Geology, Ships (Nonmilitary), Meteorology, Geophysics, Geophysical explorations, *Glaciers, Gravity anomalies, Ionosphere, Aurorae.

SOVIET WORKS ON THE ANTARCTIC: SELECTED BIBLIOGRAPHIC ENTRIES. 1 Oct 63, 5p
Order from GPRC $1.00

Trans. of mono. Report no. 3 to SCAR on Activities Planned for 1962 and Research Program Completed in 1960 by the Soviet Antarctic Expedition, Academy of Sciences of the USSR, Soviet Committee on Antarctic Research, Moscow, June 61.

DESCRIPTORS: *Scientific research, *Antarctic regions, Reports, *Bibliographies.

SOVIET WORKS ON THE ANTARCTIC: SELECTED BIBLIOGRAPHIC ENTRIES. 1 Oct 63, 8p
Order from GPRC $1.60

Trans. of mono. Report no. 4 to SCAR on Activities Planned for 1963 and Research Program Completed in 1961 by the Soviet Antarctic Expedition, Academy of Sciences of the USSR, Soviet Committee on Antarctic Research, Moscow, Jun 62.

DESCRIPTORS: *Scientific research, *Antarctic regions, Reports, *Bibliographies.

Dolginov, Sh.
TERRESTRIAL MAGNETISM. 18 Oct 63, 14p JPRS: 21493.
Order from OTS $0.50 63-31959

Trans. of Aviatsiya i Kosmonavtika (USSR) 1963 [v. 46] no. 7, p. 26-32.

DESCRIPTORS: *Terrestrial magnetism, Magnetic fields, Magnetic storms, Magnetic properties, Geophysics.

A general survey of current knowledge.

Narzykulov, M. N.
NEW PLANT LICE (HOMOPTERA, APHIDIDAE) FROM THE MOUNTAIN REGIONS OF TADJIKISTAN, tr. by R. Ericson. June 60, 11p. (figs. omitted).
Order from OTS or SLA $1.60 63-23591

Trans. of Ent[omologicheskoe] Obozr[enie] (USSR) 1957, v. 36, no. 3, p. 671-694.

DESCRIPTORS: *Homoptera, Taxonomy, Lice, Arthropods, Mountains, Ecology,

The following new species are characterized: Periphyllus mamontovae; Neothomasia pruinosae; Acyrthosiphon rubi; A. spiraeae; Avicennina sogdiana (Avicennina being a new genus); Liosomaphis lydiae; Myzaphis bey-bienkoi; Tricaudatus (Rhopalomyzus) berberidis (Tricaudatus being a new genus); Hayhurstia aizenbergi; Brevicoryne shaposhnikovi; Dysaphis pavlovskyana; Pemphigus iskanderkuli; P. montanus.

Tanasijevic, Dorde and Pavicevic, Nikola.
THE SOIL COVER OF MACVA, POCERINA AND JADAR (Pedoloski Pokrivac Macve, Pocerine i Jadra) tr. by Aleksandar Petrovic. 1963, 134p 16refs PL-480 Agr.
Order from OTS $1.25 60-21614

Trans. of Zemljiste i Biljka (Yugoslavia) 1953, v. 2, no. 2, p. 193-316.

DESCRIPTORS: *Soils, Yugoslavia, Chemical analysis, Classification, Plants (Botany), *Maps.

Topics include: geographical position and magnitude of the studied region; natural factors influencing the formation of the soil; soil types in Mačva, Pocerina and Jadar; brown forest soil; podzol; mineral bog soils; smonitza and podzolized smonitza; alluvium; skeletal podzolized soil; and, the condition of soil types and the methods of ameliorating them for further use.

Tolstikov, E. I.
WORK IN ANTARCTICA. 21 Oct 63, 9p JPRS: 21531
Order from OTS $0.50 63-31978

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 5, p. 79-82.

DESCRIPTORS: *Antarctic regions, *Terrestrial magnetism, Geophysics, Ionosphere, Cosmic rays, Aurorae, Oceanology.

An outline of work planned at the Soviet Antarctic stations in conjunction with the International Year of the Quiet Sun.

Zverev, S. M. and others.
DEEP SEISMIC SOUNDING OF THE EARTH'S CRUST. 1963, 500p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Glubinnoe Seismicheskoe Zondirovanie Zemnoi Kory v SSSR, Leningrad, 1962, 495p].

DESCRIPTORS: *Seismic waves, *Earthquakes, *Lithosphere, Stratigraphy.

Climatology and Meteorology

Belyaev, V. P., Vinnichenko, N. K., and Pakhomov, L. A.
ELECTROMETEOROGRAPH FOR HELICOPTER (VEM) 26 July 63 [21]p. (figs. omitted) 3 refs.
FTD-TT-63-632.
Order from OTS or SLA $2.60 63-23781

Unedited rough draft trans. of Glavnaya Geofizicheskaya Observatoriya, Leningrad. Trudy (USSR) 1962, no. 135[197] p. 135-146.

DESCRIPTORS: Airborne, *Meteorological instruments, *Recording systems, *Helicopters, *Measuring devices (Electrical and electronic), Electric bridges, Calibration, Reliability (Electronics), Tests, Measurement, Design, Operation.

Described is a helicopter electrometeorgraph and its individual units. An evaluation of maximum measurement error is given. (Author)

Bodolai, I.
AN EXPERIMENT IN NUMERICAL PREDICTION OF PRECIPITATION WITH THE PASSAGE OF A COLD FRONT. 24 Jul 61 [6p] (figs tables omitted) 7refs
Trans. no. 106 (M); [DSIR] NLL M. 3827.
Order from OTS or SLA $1.10 63-19737

Unedited trans. of Met[eorologiya i] Gidr[ologiya] (USSR) 1959, no. 12, p. 21-26.

DESCRIPTORS: *Weather forecasting, *Atmospheric precipitation, *Air mass analysis, Atmospheric motion, Numerical analysis, Meteorology.

Calculations to determine the condensation processes at the 850 and 700 mb. surfaces of a cold front are presented. The amount of precipitation falling during the passage of a cold front is determined by vertical motion, the thermal development of the front, the degree of saturation and the temperature of the air.

Borovikov, A. M. and Kostarev, V. V.
ON THE ACCURACY OF RADAR MEASURING THE ALTITUDE OF CLOUDS. 18 July 63 [10]p.
FTD-TT-63-539.
Order from OTS or SLA $1.10 63-23714

Unedited rough draft trans. of Tsentral'naya] Aerol[ogicheskaya] Observ[atoriya. Trudy] (USSR) 1961, no. 36, p. 37-42.
Another trans. is available from ATS $7.50 as ATS-33Q68R [1963] 6p.

DESCRIPTORS: *Clouds, *Height finding, *Radar equipment, *Meteorological radar, Aircraft, Feasibility studies, Meteorology, Cloud height indicators.

Results are discussed concerning comparative radar and aircraft observations of altitude boundaries of clouds. It was established, that with the aid of a radar station, developed at the TSAO, it is possible to make a convenient altitude measurement of the upper boundarie of clouds with an accuracy of ± 100 m. The practical advisability of employing the radar method for measuring the altitude of lower cloud boundaries is explained. This is due to the "masking" of lower boundaries of radar images of clouds on account of large particles falling out from the clouds. (Author)

Budyko, M. I., Efimova, N. A. and others.
THE HEAT BALANCE OF THE EARTH'S SURFACE. 31 July 62 [14]p. (figs. tables Eng. refs. omitted) 11 refs. Trans. no. 153(M); [DSIR] NLL M. 3980.
Order from OTS or SLA $1.60 63-19851

Unedited trans. of Ak[ademiya] Nauk SSSR. Izv[estiya]. Ser[iya] Geograf[icheskaya] 1962, no. 1, p. 6-16.

DESCRIPTORS: *Heat, Distribution, *Earth, Surface area, Meteorological charts, Oceans, Heat transfer, Evaporation, Climatology, Meteorology, Atmosphere, Measurement, *Thermal radiation.

The preparation of world charts of the components of the heat balance of the earth's surface is discussed. Initial data used in the calculation of the components are these: air temperature, humidity, cloud, precipitation, wind speeds and temperatures of the surface of the water taken from various climatological handbooks. The calculations of the components of the heat balance are made for about 2000 points, of which about 500 are on the surface of oceans and seas. The results are analyzed and presented.

Chao, Ber-lin.
CERTAIN FEATURES OF TURBULENT EXCHANGE IN THE GROUND LAYER DURING WINTER IN PEKING, tr. by N. H. Ng. Jun 63 [18p] 7refs
E-T-Ch-63-7. Contract AF 19(604)8505
Order from OTS or SLA $1.60 63-24103

Trans. of Pei Ching Ta Hsüeh Hsüeh Pao: Tzu Jan K'o Hsüeh (Chinese People's Republic) 1956, v. 2, no. 4, p. 479-488.

DESCRIPTORS: *Atomospheric motion, *Convection, *China, Heat transfer, Diurnal variations, Numerical analysis, Meteorology, Stratification.

This paper deals primarily with a computation of certain features of the turbulent exchange of the ground layer, e.g., the austausch coefficient and heat flux transfer during winter in Peking. The results are compared and discussed. Comments on Budyko's formula are made in the appendix. (Author)

Dobrysman, E. M.
ON THE QUESTION OF LONG-PERIOD FORECASTING OF THE HUMIDITY FIELD IN THE TROPOSPHERE, tr. by T. C. Marwick. 28 Oct 60 [12p] 7refs
Trans. no. 71 [DSIR] NLL M. 3835.
Order from OTS or SLA $1.60 53-19912

Unedited trans. of [Tsentral'nyi] Inst[itut] Prog[nozov]. Trudy (USSR) 1958, v. 78, p. 64-72.

DESCRIPTORS: *Weather forecasting, Humidity, *Troposphere, Equations, Mathematical analysis, Meteorology.

Consideration is given to an equation for describing variations in the moisture content of the atmosphere.

Geiger, R[udolf].
CLIMATE OF THE AIR LAYER NEAR THE GROUND [4TH ED]. 1963, 600p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Das Klima der Bodennahen Luftschicht, 4th ed., Braunschweig, n.d., 646p].

DESCRIPTORS: Climatology, *Atmosphere, *Forestry, *Agriculture.

Kondrat'ev, K. Ya.
METEOROLOGICAL INVESTIGATIONS WITH ROCKETS AND SATELLITES. Sep 63, 284p 322refs
NASA TT F-115.
Order from OTS or SLA $4.00 63-11711

Trans. of mono. Meteorologicheskie Issledovaniya s Pomoshch'yu Raket i Sputnikov, Leningrad, 1962 [252p].

DESCRIPTORS: *Sounding rockets, *Meteorological satellites, *Atmospheric sounding, *Upper atmosphere, Weather forecasting, Meteorological parameters, Meteorology.

The monograph considers methods and results of meteorological investigations with rockets and satellites. Methods for investigating the structure, composition, and dynamics of the upper atmosphere, and the possibility of utilizing artificial earth satellites for studying weather-forming processes in the troposphere and stratosphere are discussed. Modern information as to the composition, structure, and wind patterns of the upper atmospheric layers are given in detail, as are the results of investigations into solar and terrestrial radiation. (Author)

Kostarev, V. V.
TRIAL OF RADAR-SOUNDING OF THE TROPOSPHERE. 12 Feb 62 [17p] 1ref Trans. no. 130(M) [DSIR] NLL M. 3837.
Order from OTS or SLA $1.60 63-19910

Unedited trans. of Tsent[ral'naya] Aerol[ogicheskaya] Obs[ervatoriya]. Trudy (USSR) 1958, no. 20, p. 3-16. Another trans. is available from ATS $17.95 as ATS-62L34R [1959] 13p.

DESCRIPTORS: *Meteorological radar, *Atmospheric sounding, *Troposphere, Meteorology.

Mashkovich, S. A.
THEORETICAL MODEL FOR STUDYING THE FORMATION OF THE GENERAL CIRCULATION OF THE ATMOSPHERE AND OF CLIMATIC FIELDS OF THE METEOROLOGICAL ELEMENTS, tr. by T. C. Marwick. 26 Oct 60 [24p] 11refs
Trans. no. 70 [DSIR] NLL M. 3836.
Order from OTS or SLA $2.60 63-19911

Unedited trans. of [Tsentral'nyi] Inst[itut] Prog[nozov]. Trudy (USSR) 1958, v. 78, p. 37-63.

DESCRIPTORS: Atmosphere models, *Atmospheric motion, Climatology, Climatic factors, *Meteorological parameters, Meteorological phenomena.

A solution is put forward for the non-linear problem of the development of large-scale processes in the atmosphere for an arbitrary initial distribution of the meteorological elements and of the variation in the time of influx of heat from the sun. (Author)

Murzaev, E. M., ed.
THE CLIMATE OF CENTRAL ASIA. [1963] [31p] (figs omitted) Trans. no. 119(M); [DSIR] NLL M. 3757.
Order from OTS or SLA $3.60 63-19800

Unedited trans. of unidentified mono., Moscow, 1958, p. 119-143.

DESCRIPTORS: *Asia, *Climatology, Meteorology, Meteorological parameters.

Pinus, N. Z.
VERTICAL MOTIONS IN STORM CLOUDS. 6 Sep 63, 5p. 5 refs. JPRS: 20956.
Order from OTS $0.50 63-31694

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 150, no. 4, p. 788-790.

DESCRIPTORS: *Atmospheric motion, *Convection, *Storms, *Clouds, Cumulonimbus clouds, Meteorology, Cumulus clouds, Research planes, Measurement.

The results of studies of turbulence in thick cumulus and cumulonimbus clouds are presented. Experiments made at different levels around and over these clouds are described. The information obtained has general application in determining the mean pattern of distribution of turbulence parameters in cumulonimbus clouds, in calculations associated with the introduction of different kinds of reagents into well-developed cumulus and cumulonimbus clouds for the purpose of artificial regulation of their development and in selecting the flight level for aircraft and ensuring flight safety.

Pilhringer, A.
CONTRIBUTIONS TO AN ELECTRICAL THEORY OF TORNADOES. [1963] 9p (figs omitted) 14refs JPRS: 21343.
Order from OTS $0.50 63-31890

Trans. of Archiv für Meteorologie, Geophysik und Bioklimatologie. Series A: Meteorologie und Geophyski (Austria) 1963, v. 13, no. 3/4, p. 450-460.

DESCRIPTORS: *Tornadoes, *Storms, *Electromagnetic properties, Meteorology, Analysis, Theory, Inductance, *Atmospheric electricity, Meteorological phenomena.

It was shown that thunderstorm theory, based on electro-magnetic induction is also applicable to the tornado problem. Several characteristics of the tornado are easily explained, adding evidence of the validity of the thunderstorm theory. The strongest argument in favor of the effectiveness of electro-magnetic induction may be considered the observation of a rhomb-shaped thunderstorm cloud which generated several tornadoes. Such a cloud can be explained by the spatial distribution of its dipole elements. (Author)

Revich, Vsevolod.
AT THE HAIL CLOUD: FIRE! 30 Aug 63, 15p. JPRS: 20856.
Order from OTS $0.50 63-31651

Trans. of Nauka i Zhizn' (USSR) 1963 [v. 30] no. 5, p. 29-34.

DESCRIPTORS: *Hail, *Atmospheric precipitation, Clouds, Antiaircraft guns, Reagents, Silver compounds, Iodides, Control, Meteorology.

A popularized account is given of a method of hail control which is based on the use of antiaircraft guns. Projectiles filled with chemical reagents are fired into hail bearing clouds where the reagents are diffused in a spray, crystallizing the droplets of water, giving them no chance to freeze into large hailstones that are dangerous to crops.

Sadokov, V. P.
ON A NUMERICAL METHOD OF COMPUTING THE PRESSURE FIELD FOR A BAROCLINIC ATMOSPHERE, tr. by T. C. Marwick. 28 Oct 60 [9p] 4refs Trans. no. 74 [DSIR] NLL M. 3834.
Order from OTS or SLA $1.10 63-19913

Unedited trans. of [Tsentral'nyi] Inst[itut] Prog[nozov]. Trudy (USSR) 1958, v. 78, p. 105-111.
Another trans. is available from OTS or SLA $1.60 as 60-41102, JPRS-5209, 3 Aug 60, 12p.

DESCRIPTORS: *Barometric pressure, *Weather forecasting, Meteorological parameters, Computers, *Numerical analysis, Meteorology.

For abstract see Technical Translations 4: 509, 1960

Sokhrina, R. F., Chelpanova, O. M., and Sharova, V. Ya.
AIR PRESSURE, AIR TEMPERATURE AND AMOUNT OF PRECIPITATION IN THE NORTHERN HEMISPHERE: ATLAS OF CHARTS. (PREFACE). 1961 [7p] Trans. no. 94 [DSIR] NLL M. 3830.
Order from OTS or SLA $1.10 53-19918

Partial trans. (preface) of mono. [Davlenie Vozdukha, Temperatura Vozdukha i Atmosfernya Osadki Severnogo Polushariya] Leningrad, 1959 [473p.]

DESCRIPTORS: *Meteorological charts, Barometric pressure, Atmospheric temperature, Northern Hemisphere, Meteorology.

Suleikin, V. V.
WINTER TRANSFER OF HEAT FROM THE OCEAN AND EFFECTIVE BACK RADIATION WHEN THE SURFACE OF THE CONTINENT IS A COMPLEX STRUCTURE. 14 June 62 [6]p. (equations figs. omitted) 4 refs. Trans. no. 145(M); [DSIR] NLL M. 3886.
Order from OTS or SLA $1.10 63-19952

Trans. of Akademiya Nauk SSSR. Doklady, no. 2, p. 351-354 [sic].

DESCRIPTORS: *Heat transfer, *Oceans, Marine meteorology, Atmospheric temperature, Terrain, Climate, Analysis, Thermal radiation.

Investigations were made of the influence of winter thermal currents from the ocean, and continental structures on the temperature fields above Australia, Europe and Asia. Results indicated that all the heat entering the continent from the ocean is inevitably totally used up in effective back radiation from the active layer of the atmosphere above the continent, and that heat which does not reach the depths of the continent is used in an increased effective back radiation in the coastal zone of the continent.

Frost Science

Gordienko, P. A.
SCIENTIFIC OBSERVATIONS AND CONDITIONS OF DRIFT OF THE STATION "NORTH POLE" (SEVERNYI POLIUS"). 1 Oct 63
Order from GPRC

Trans. from Problemy Arktiki i Antarktiki (USSR) 1962, no. 2.

DESCRIPTORS: *Scientific research, *Drift, *Ice islands, Test facilities, *Arctic regions, Weather stations.

Markov, K. K. and Kapitsa, A. P.
GLACIOLOGY OF ANTARCTICA AND PROBLEMS OF PALEOGLACIOLOGY. 1 Oct 63, 4p.
Order from GPRC $0.80

Partial trans. of mono. Antarktika, Moscow, 1962.

DESCRIPTORS: *Glaciers, *Ice, *Antarctic regions, Geology.

Geodesy

Balavadze, B. K.
PROCEDURE FOR THE DETERMINATION OF THE VERTICAL GRADIENT OF THE FORCE OF GRAVITY [K Metodike Opredeleniya Vertikal'nogo Gradienta Sily Tyazhesti]. 1 Oct 63, 20p
Order from GPRC $4.00

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Geofizicheskaya, 1955, no. 1, p. 45-56.
Another trans. is available from SLA as RT-3991.

DESCRIPTORS: *Gravity, Determination, Geophysics, *Geodesics.

Barta, G.
THE CONNECTION BETWEEN THE ECCENTRICITY OF THE GEOMAGNETIC FIELD AND THE TRIAXIALITY OF THE EARTH. 12 Jun 62, 2p
AID Rept. 62-79; AD-288 973.
Order from OTS or SLA $1.10 62-32122

Abstract trans. of Acta Technica (Hungary) 1961, v. 37, p. 211-227.

DESCRIPTORS: *Terrestrial magnetism, Gravity, *Geophysics, Geodesics,

Fel'dman, G. A.
NEW DEVELOPMENTS IN PHOTOTACHYMETRY EQUIPMENT. 18 Oct 63, 7p 7refs JPRS: 21509.
Order from OTS $0.50 63-31966

Trans. of Geodeziya i Kartografiya (USSR) 1963, no. 8, p. 62-66.

DESCRIPTORS: *Optical equipment, *Distance-measuring equipment, Design, Operation, Geodesics, Instrumentation, Lasers.

Mikov, D. S.
ATLAS OF THEORETICAL CURVES FOR THE INTERPRETATION OF MAGNETIC AND GRAVITY ANOMALIES: [SELECTED PARTS]. 1 Oct 63, 5p
Order from GPRC $1.00

Trans. of unidentified mono. [issued by] Gosudarstvennoe Nauchno-Tekhnicheskoe Izdatel'stvo Literatury po Geologii i Khrane Nedr SSSR, Tomsk, 1956, table of contents, foreword, list of figs.

DESCRIPTORS: *Gravity anomalies, *Terrestrial magnetism, Geophysics, Geodesics.

Shlyakhtina, A. P.
MAP OF GEOMAGNETIC FIELD STRENGTH DISTRIBUTION IN THE ANTARCTIC. 1 Oct 63, 6p
Order from GPRC $1.20

Trans. of Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 4 [p. 759-762].

DESCRIPTORS: *Maps, *Terrestrial magnetism, Distribution, Magnetic properties, *Antarctic regions, Geophysics.

Troitskaya, V. A.
IN GHANA'S SCIENTIFIC INSTITUTIONS. [1963] 6p
JPRS: 21574.
Order from OTS $0.50 63-31993

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 5, p. 83-86.

DESCRIPTORS: *Terrestrial magnetism, Geophysics, Ionosphere, Universities, Scientific organizations, Ghana.

Ushakov, S. A. and Lazarev, G. E.
ON THE ISOSTATIC DEFLECTION OF THE EARTH'S CRUST IN THE ANTARCTIC UNDER THE WEIGHT OF THE ICE LOAD. 1 Oct 63, 10p
Order from GPRC $2.00

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 129, no. 4 [p. 785-788].

DESCRIPTORS: *Lithosphere, *Load distribution, *Ice, *Antarctic regions, Geophysics.

Geology

STRATIGRAPHIC TABLES AND GEOLOGIC MAPS OF THE NORTHEAST USSR, 1959. 1961, 1v.
Order from AGI $20.00 photocopy

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Maps, Tables, *Geology, *Stratigraphy.

Belyaeva, E. I.
CATALOGUE OF TERTIARY FOSSIL SITES OF LAND MAMMALS IN THE USSR. 1962, 114p
Order from AGI $15.00 photocopy

Trans. of Akademiya Nauk SSSR]. Paleont[ologicheskii] Inst[itut]. [Trudy, 1948] v. 15, no. 3, p. 36-116.

DESCRIPTORS: *Catalogs, *Paleontology, *Mammals, Geology.

Demenitskaya, R. M., Karasik, A. M., and Kiselev, Yu. G.
RESULTS OF A GEOPHYSICAL STUDY OF THE GEOLOGICAL STRUCTURE OF THE EARTH'S CRUST IN THE CENTRAL ARCTIC. 1 Oct 63
Order from GPRC

Trans. from Problemy Arktiki i Antarktiki (USSR) 1962, no. 2.

DESCRIPTORS: *Structural geology, *Lithosphere, *Arctic regions, Geophysics, Geology.

Dobryansky, A. F.
THE TRANSFORMATION OF PETROLEUM IN NATURE. [1963] 11p
Order from ATS $13.85 ATS-14Q72F

Trans. of Rev[ue de l']Inst[itut] Franç[ais du] Pétrole [et] Ann[ales des] Combust[ibles] Liquides, 1963, v. 18, no. 1, p. 41-49.

DESCRIPTORS: *Petroleum, Transformations.

Drushchits, V. V. and Shimanskii, V. N.
ON THE MAGNITUDE OF THE PALEOZOIC ERA (Ob Ob'eme Paleozoiskoi Ery) tr. by Ivan Mittin. 1963 [11]p. 12 refs.
Order from OTS or SLA $1.60 63-19587

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 144, no. 5, p. 1115-1118.

DESCRIPTORS: *Paleontology, *Stratigraphy, Geologic age determination, Geology.

It is proposed that the Paleozoic era be divided not into three but two parts, and that each of these parts be regarded an an independent era. The advisability of such a subdivision of the Paleozoic era is supported with several reasons.

Godin, Yu. N. and others.
PECULIARITIES OF THE STRUCTURE OF THE EARTH'S CRUST IN THE WEST OF CENTRAL ASIA (Osobennosti Stroeniya Zemnoi Kory Zapada Srednei Azii) tr. by Walter Burton. May 63 [7]p. 18 refs.
ACIC TC-622.
Order from OTS or SLA $1.10 63-23158

Trans. of [Akademiya Nauk SSSR. Doklady] 1962, v. 146, no. 4, p. 813-815.

DESCRIPTORS: *Structural geology, *Lithosphere, *Asia, Seismic waves, Gravimeters, *Geophysics, Data, Analysis, Geology.

The study deals with the relief scheme of the subcrustal layer (the Moho surface) compiled for the territory of the Central Asia according to materials of deep seismic sounding, seismology and results of quantitative interpretation of the gravimetric survey data. The scheme encompasses the territory of the Turkmenian SSR, the Bukharo-Khivinskiy region of the Uzbekistan, the Fergana intermontane trough and the adjacent to it in the west Pritashkentskiy region as well as the Golodnaya Step' depression, and, in the south, the Tadzhik depression and the Pamir-Alay regions. (Author)

Gurarii, G. Z. and Solov'eva, I. A.
DENSITY OF EARTH'S MANTLE: PRELIMINARY DATA (Predvaritel'nye Dannye o Plotnosti Veshchestva Zemnoi Mantii) tr. by D. Shalikashvili. May 63 [9]p. 13 refs. ACIC TC-621.
Order from OTS or SLA $1.10 63-23157

Trans. of [Akademiya Nauk SSSR. Doklady] 1962, v. 146, no. 4, p. 877-880.

DESCRIPTORS: *Structural geology, *Lithosphere, Density, Gravity anomalies, Seismic waves, *Geophysics, Data, Analysis, Geology.

A joint analysis of gravimetric and seimic data demonstrated that the mantle has no uniform horizontal density down to 40-50 km and possibly even deeper. In many cases the sections of non-uniform density are located directly under the Mohorovicic surface. Sometimes we should assume the existence of density non-uniformities at great depths. Under the region of the Caribbean Sea the density of the mantle as a whole is greater than under the open part of the Atlantic. The most differentiated density of the mantle is under oceanic basins. Under continents the mean density is the same under the Mohorovicic border. Horizontal borders of sections with more or less complicated reliefs can exist deeper. (Author)

Kaleda, G. A.
STATUS OF THE STRATIGRAPHY OF DEVONIAN DEPOSITS IN THE ALAY AND TURKESTAN MOUNTAINS (O Sostoyanii Stratigrafii Devonskikh Otlozhenii Alaiskogo i Turkestanskogo Khrebtov) tr. by Dimitri Shalikashvili. Apr 63 [31]p. 21 refs. ACIC TC-601.
Order from OTS or SLA $3.60 63-19538

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii]. Geologiya i Razvedka (USSR) 1962 [v. 5] no. 11, p. 36-50.

DESCRIPTORS: *Stratigraphy, *Paleontology, Animals, Structural geology, Asia, Mountains, Geology,

A study is made of the stratigraphy of Devonian deposits in the area of the Alay and Turkestan mountain ranges. The area is separated into the following facies-structural zones: zones of accumulation of organic calcareous sediments during the greater part of the Devonian; zones of accumulation of effusive-sedimentary strata of the lower Devonium; zones of formation of pelitomorphic limestones and dolomites; and zones of a deposition of fragmentary and calyey rocks. In the studied territory, only the cross sections of zones with organic sedimentation are characterized faunally in a satisfactory way. The remaining zones have a poor paleontologic characteristic and for the division of their cross section the method of lithology-stratigraphic comparisons must be applied. The faunal stratigraphy is based mainly upon the fauna of brachiopods. In the calcareous zones, the base of Konchidiella layers is the most distinct lithologic stratigraphic border.

Korzhinskii, D. S.
ACIDITY REGIMEN OF POSTMAGMATIC SOLUTIONS (Rezhim Kislotnosti Poslemagmaticheskikh Rastvorov) tr. by Ivan Mittin. 1963 [27p] 11refs
Order from OTS or SLA $2.60 63-23601

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Geologicheskaya, 1957 [v. 22] no. 12, p. 3-12.

DESCRIPTORS: *Geochemistry, *Igneous rock, Rock (Geology), *Fused materials, Solutions, Granite, Phase studies, Hydrogen ion concentration, Activity coefficient

Regardless of the temperature conditions of their formation, the post-magmatic mineral deposits always reveal phases of increasing and then decreasing acidity of solutions. The article discusses possible causes of such a regimen. A probable cause is the faster filtration of certain acidic components of the solution causing an "advancing wave" of stronger acidity in the percolating flow, which explains the increase and the subsequent decrease in acidity of each given cross-section of the flow. It is demonstrated analytically that, with increasing acidity of the solution, the degree of ionization rises more rapidly in bivalent and particularly trivalent bases than in monovalent bases. Therefore, the post-magmatic acid phase must have different effects on basic and alkaline rocks than on rocks of acidic composition. Particularly, the pyrrhotitic and titanomagnetitic metallization in gabbroic and ultrabasic rocks, and the formation of carbonatites in alkaline massifs, may be considered as manifestations of the acid phase of a post-magmatic process in the medium of basic and alkaline rocks, respectively. (Author)

Kudymov, B. [Ya].
SPECTRAL WELL LOGGING. 1963, 80p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Spektral'niy Karotazh Skvazhin; Geokhimicheskie Issledovaniya Osadochnykh Porod, Moscow, 1960, 60p].

DESCRIPTORS: *Sedimentary rock, *Well logging, Spectroscopy, Distribution, *Geochemistry, *Petrology.

Kuznetsov, S. I. [Ivanov, M. V., and Lyalikova, N. N.].
INTRODUCTION TO GEOLOGICAL MICROBIOLOGY. 1963, 252p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Vvedenie v Geologicheskuyu Mikrobiologiyu, Moscow, 1962, 238p].

DESCRIPTORS: *Microorganisms, Bacteria, Sedimentary rock, Paleontology, *Fuels, *Sulfur, Oxidation, *Iron, Water, *Geochemistry.

Magnitskii, V. A.
THE UPPER MANTLE AND ITS EFFECT ON THE DEVELOPMENT OF THE EARTH'S CRUST. 1 Oct 63, 15p
Order from GPRC $3.00

Trans. of unidentified article from unknown Russian source, n.p., n.d.

DESCRIPTORS: *Lithosphere, *Geogony, *Structural geology, Geology.

Markov, F. G. and Nalivkin, D. V., eds.
GEOLOGY OF THE SOVIET ARCTIC, tr. by Kathleen Price and William A. Kneller. 1 Oct 63, 1155p
Order from GPRC $231.00

Trans. of unidentified mono. [issued by] Gosudarstvennoe Nauchno-Tekhnicheskoe Izdatel'stvo Literatury po Geologii i Okhrane Nedr SSSR, Moscow, 1957.

DESCRIPTORS: *Geological survey, *Arctic regions, Geology.

Mogilevskii, G. A.
SOME RELATIONSHIPS OF THE DISTRIBUTIONS OF NATURAL GASES AND OF BACTERIA IN A REGION OF OIL AND GAS FIELDS. [1963] [13p] 3refs
Order from OTS or SLA $1.60 63-20250

Trans. of Akad[emiya] Nauk SSSR. Inst[itut] Mikrobiol[ogii]. Trudy, 1961, v. 9, p. 45-56.

DESCRIPTORS: *Natural gas, *Bacteria, Geology, *Petroleum, Oxidation, Propanes, Methanes, Hydrocarbons.

In a series of USSR regions investigations were carried out on the distribution of hydrocarbon oxidizing bacteria in subsoil horizonts and waters with the goal of oil and gas prospection. Determined relationships in distribution of natural gases and microorganisms on the zone of deposits were found. Positive results of the prospection were in most cases confirmed through drilling. A neat differentiation of gas-saturation characteristics in the cut appears for the propane oxidizing bacteria. Their highest characteristics in upper horizonts were exposed on surfaces with multi-layer-type deposits. The number of these bacteria drops faster with increasing depth, than that of methane-oxidizing bacteria. An inverse relationship of CO_2 content in underground gases with the quantity of hydrocarbon oxidizing bacteria was observed. Earlier observations on the absence of propane-oxidizing bacteria in known petroleum-bare regions were confirmed. Comparative study on different forms of the indicator-bacteria showed that the first place by the number of cases of exposure belonged to the methane oxidizers, then by diminishing order follow the propane-, ethane- and butane oxidizing bacteria. Model experiments show the possibility of hydrocarbon gases diffusion through water-bearing layers. Hydrocarbon oxidating bacteria can increase or inhibit the gas diffusion, according to the nature of their development. (Author)

Pavlova, A. I., comp.
STRUCTURE OF THE CRUST AND UPPER PART OF THE EARTH'S MANTLE BASED ON GEOPHYSICAL DATA: BIBLIOGRAPHIC INDEX 1937-61. 1 Oct 63, 27p
Order from GPRC $5.40

Trans. of unidentified mono. [issued by] Akademiya Nauk SSSR, Moscow, 1962.

DESCRIPTORS: *Lithosphere, *Structural geology, Geophysics, *Bibliographies, Indexes.

Senkevich, M. A.
NEW DATA ON THE FOSSIL FAUNA AND FLORA OF PALEOZOIC, MESOZOIC, AND CENOZOIC ROCKS OF THE RUSSIAN PLATFORM, THE CRIMEA, AND CENTRAL ASIA: FOSSIL PLANTS OF THE UPPER DEVONIAN OF THE TIMAN AREA. Paleontological Symposium (no. 3). 6 Dec 60 [27p] (figs omitted) 19refs
Order from OTS or SLA $2.60 61-15894

Trans. of [Vsesoyuznyi Nauchno-Issledovatel'skii Geologo-Razvedochnyi Neftyanoi Institut, Moscow. Trudy] (USSR) 1960, v. 16 [p. 107-123].

DESCRIPTORS: *Paleontology, Animals, Plants (Botany), Rock (Geology), Stratigraphy, Geology.

Silar, Jan.
MORPHOLOGY AND DEVELOPMENT OF KEGELKARST IN SOUTHERN CHINA AND NORTHERN VIETNAM. 27 Aug 63, 12p. (figs. omitted) 25 refs. JPRS: 20830.
Order from OTS $0.50 63-31635

Trans. of Petermanns Geographische Mitteilungen (West Germany) 1963, v. 107, no. 1, p. 14-19.

DESCRIPTORS: *Structural geology, *Limestone, Rock (Geology), *Petrology, *China, *Vietnam, Geology,

The influence of climatical and geological conditions on the geomorphological development of the kegelkarst regions of Southeast Asia, particularly those of South China and North Vietnam, is investigated. In southern China and adjacent parts of northern Vietnam there are impressive indications of tropical karstification, extending into the Paleogenic or earlier periods, with extensively distributed regions of carbonate rocks.

Under heavy precipitation there is strong and concentrated corrosion, both surface and subterranean, and the surface becomes dissected into hills and dolines. The deep-acting corrosion and the deepening of the karst depressions decrease when the base level of erosion is reached; lateral corrosion then intensifies, forming the foot of the hills. Their slopes become steep, and caves develop at the foot. Variously shaped haystacks and mogotes thus resulting from the hums protrude individually or in groups above the common base.

Simonenko, T. N.
CONCERNING THE USE OF MAGNETOMETRIC DATA TO DETERMINE THE EARTH'S CRUSTAL STRUCTURE IN PLATFORM AREAS, tr. by George Synenko. May 63 [24]p. 18 refs.
ACIC TC-623.
Order from OTS or SLA $2.60 63-23159

Trans. of Sovetskaya Geologiya (USSR) 1962, no. 8, p. 3-15.

DESCRIPTORS: *Terrestrial magnetism, *Magnetometers, Surveying, *Lithosphere, Structural geology, *Geophysics, Data, Analysis, Geology.

On the basis of the data of the geophysical investigations considered in this article, the following may be concluded: (1.) An existence of the world ("continental") anomalies of the geomagnetic field can not be explained by an effect of the earth's crust. (2.) A character of the basaltic layer of the earth's crust does not effect the distribution of the geomagnetic field. (3.) Anomalies, separated on the background of the basic (normal) geomagnetic field, are caused by thermomagnetized geological bodies located in the granitic field. Thus, in essence according to the magnetometric data, it is possible to determine the continental thickness of the earth's crustal granitic layer. (Author)

Starik, I. E., Sobotovich, E. V., Shats, M. M., and Grashchenko, S. M.
ON THE QUESTION OF THE ORIGIN OF TEKTITES (K Voprosu o Proiskhozhdenii Tektitov). Dec 62, 10p 18refs NASA Technical Trans. F-113; N63-11611.
Order from OTS $0.50 63-11547

Trans. of Meteoritika (USSR) 1962, v. 22, p. 97-[103].

DESCRIPTORS: *Rock (Geology), *Geochemistry, Uranium, Lead, Data, Mathematical analysis, *Meteorites, Geologic age determination.

The question of the origin of tektites is approached through mathematical analysis of the data concerning the concentration of uranium and lead in samples and the isotopic composition of the lead. This type of analysis permits a closer approach to an understanding of the processes which occurred during the formation of tektites and a fixing of the time at which they separated from their source material. (NASA Abstract)

Vorob'ev, G. G.
AN EXPERIMENT IN THE USE OF PUNCHED CARDS IN THE STUDY OF PROBLEMS RELATING TO TEKTITES (Opyt Ispol'zovaniya Perfokart pri Izuchenii Problemy Tektitov). Dec 62, 7p 6refs NASA Technical Trans. F-114; N63-11612.
Order from OTS $0.50 63-11548

Trans. of Meteoritika (USSR) 1962, v. 22, p. 157-161.

DESCRIPTORS: *Data processing systems, *Punched cards, *Meteorites, *Rock (Geology), Classification, Minerals.

A manual system has been worked out for sorting 10,000 or more punched cards for classifying and systematizing tektite data. The system may be adapted to the field of meteoritics proper with no special changes. (NASA Abstract)

Mineralogy

Luntz, A. Ya. and Sal'dau, E. P.
GENTHELVITE FROM PEGMATITES ON THE KOLA PENINSULA (Gentgelvin iz Pegmatitov na Kol'skom Poluostrove) tr. by Ivan Mittin. 1963 [11p] 4refs
Order from OTS or SLA $1.60 63-23600

Trans. of Vses[oyuznoe] Mineralog[icheskoe] Ob[shchestvo]. Zapiski (USSR) 1963, v. 92, no. 1, p. 81-84.

DESCRIPTORS: *Minerals, *Pegmatite, Petrology, Geochemistry, Structural geology, Geology, Chemical analysis

Genthelvite belongs to the helvite group of minerals which form isomorphous mixtures with three end members, helvite, danolite and genthelvite. Genthelvite is pinkish-lilac in color, more rarely pinkish-yellow to colorless in the same specimen. The index of refraction is 1.745; specific gravity is 3.64. The results of chemical analysis of genthelvite indicate the following formula: $Zn_{3.00}Fe_{0.53}Mn_{0.02}Be_{2.70}Si_{3.05}O_{12}S$. X-ray data for genthelvite is also presented.

Schäfer, Walter.
THE BINARY SYSTEMS FROM CALCIUM CHLORIDE WITH BARIUM AND STRONTIUM CHLORIDE. [1963] 10p
Order from K-H $10.00 K-H 8529c

Trans. of Neues Jahrbuch [für] Mineralogie, Geologie [und Palaeontologie] (Germany) 1914, p. 15-24.

DESCRIPTORS: *Chlorides, *Strontium compounds, *Barium compounds, *Calcium compounds.

Sindeeva, N. D.
SELENIUM AND TELLURIUM. 1963, 300p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Selenium, *Tellurium, *Minerals.

Varentsov, I. M.
SEDIMENTARY MANGANESE ORES. 1963, 110p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Ores (Metal sources), *Manganese, *Sedimentary rock, Limestone, Dolomite, Shale, Quartz, Sulfur, Iron, Oxides, Phosphorus, Geology, Distribution.

Oceanography

SOVIET OCEANOGRAPHY, 1962 [NO. 1]: TRANSACTIONS OF THE MARINE HYDROPHYSICAL INSTITUTE, ACADEMY OF SCIENCES OF THE USSR, 1962, VOL. 25 (SIXTH VOYAGE OF THE MIKHALL LOMONOSOV). Aug 63, 168p
Order from AGU $16.00/year (4 issues)

Trans. of Akademiya Nauk SSSR, Morskoi Gidrofizicheskii Institut. Trudy, 1962, v. 25, p. 3-207.

DESCRIPTORS: *Oceanology, Oceanographic vessels, Ocean currents, Atlantic Ocean, Ocean waves, Marine meteorology, Chemistry, Organic materials, Carbon, Oxygen, Colorimetric analysis, Marine geology, Silt, Plankton, Periodiocals.

Contents:
Main scientific results of the sixth voyage of the R/V "Mikhail Lomonosov", by A. G. Kolesnikov
Study of currents in the Atlantic Ocean during the sixth voyage of the scientific-research ship "M. Lomonosov", by G. P. Ponomarenko
New characteristics of the disturbed surface of the sea derived from wave records at a fixed point, by A. I. Duvanin and others
A gradient installation for the study of the air temperature and humidity fields at sea, by M. M. Bogorodskii
Use of a photorecorder for recording wind, by A. A. Sizov
Some characteristics of the vertical structure of the atmosphere in the trade wind zone of the Atlantic Ocean, by A. I. Sorkina
New studies of the chemistry of the sea, by B. A. Skopintsev
Content of organic carbon in the waters of the Baltic and North Seas, and in the subtropical and tropical regions of the North Atlantic, by B. A. Skopintsev and S. N. Timofeeva
Results of determinations of dissolved oxygen in the waters of the subtropical and tropical regions of the North Atlantic in Aug-Oct 59, by B. A. Skopintsev and V. K. Zhavoronkina
Experimental use of an FEK-M photoelectric colorimeter for the determination of nitrites, silicates, and phosphates in sea water on the R/V "M. Lomonosov", by V. V. Sinyukov
Geological studies in the western part of the North Atlantic, by M. V. Klenova and N. L. Zenkovich
Chemical composition of silt interstitial water in the Atlantic Ocean, by O. V. Shiskina and V. S. Bykova
Plankton in the tropical region of the Atlantic Ocean, by V. A. Yashnov.

Baranov, F. I.
FIXED AND DRIFT NETS. 1962 [34p] [DSIR] NLL M. 3691.
Order from OTS or SLA $3.60 63-23390

Trans. of mono. [Teoriya i Raschet Orudii Rybolovstva] (Theory and Calculation of Fishing Gear) [2d ed.] Moscow, 1948, chap. 8, p. 220-255.

DESCRIPTORS: *Nets, Fishes, Design, Operation

Topics include: design of fixed nets; rigging of fixed nets in calm water; rigging fixed nets in a current; river drift nets; calculations for the weighting of a net; structure of the drift net fleet; working conditions and form of drift fleet; position of warp; running together of a drift fleet.

Bogoslovskii, V.
THE OCEAN: A POWER STATION. 5 Sep 63, 10p. JPRS: 20921.
Order from OTS $0.50 63-31675

Trans. of Tekhnika Molodezhi (USSR) 1963 [v. 31] no. 1, p. 37.

DESCRIPTORS: *Oceans, *Energy conversion, Solar radiation, Photosynthesis, Algae, Biochemistry, Chemical properties, Physical properties.

Emphasis is placed on the oceans of the world as a potential source of energy. Examples of energy conversion, such as solar energy being converted into a chemical by means of photosynthesis and algae, are presented. The ocean is pictured as being a giant biochemical cell with plant and animal organisms supplying the fuel and the water, abundant with salts, serving as an "electrolyte." Ocean micro-organisms perform the role of catalyst by reaction, and ocean sediment fulfills the function of the ion-exchange membrane. Finally, it is noted that the ocean currents and currents in straits have very great power. For example, the Gulf Stream transfers 83 million cubic meters of water every second with a speed of up to 2.8 meters per second.

Fomin, L. M.
THEORY AND APPLICATION OF THE DYNAMIC METHOD IN OCEANOGRAPHY. 1963, 220p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Teoreticheskie Osnovy Dinamicheskogo Metoda i Ego Primenenie v Okeanologii, Moscow, 1961].

DESCRIPTORS: *Oceanology, *Ocean currents, *Hydrographic surveying.

Ikonnikova, L. N.
THE CALCULATION OF CASPIAN SEA WAVES AND THE WIND OVER IT (Raschet Voln Kaspiiskogo Morya i Vetra nad Nim) tr. by M. Slessers. 1963 [119]p. 46 refs. NOO Trans-161.
Order from OTS or SLA $9.60 63-23149

Trans. of Gosudarstvennyi Okeanograficheskii Institut. Trudy (USSR) 1960, v. 50, p. 54-144.

DESCRIPTORS: *Marine meteorology, *Oceanology, *Caspian Sea, *Ocean waves, *Wind, Oceanographical charts, Data, Correlation techniques, Numerical analysis.

The study presents a compilation of characteristics of the Caspian Sea wave regime and wind. It is based on simultaneous instrumental measurements of waves and wind conducted in the Caspian Sea during the winter expeditions from 1952 to 1955, which were organized by the State Oceanographic Institute, as well as on special observations conducted by the Neftyanyye Kamni Station and on standard observations by the Bakinskiy Weather Bureau during the decade from 1947 to 1957. As a result, six major types of air transport over the Caspian Sea are identified, such as northwesterly, northerly, easterly, transitional, etc. and the pattern of their recurrence, duration and intensity. The relationship between the various aspects of wind fields and wave fields are determined and the corresponding wave field charts are constructed. The charts make it possible to determine the frequency and size of waves at various wind velocities and directions for the entire sea or given areas and to prepare wave forecasts. The paper is illustrated with thirty one tables, nine diagrams and sixty three charts showing baric, wind and wave fields in various sections of the Caspian Sea in various seasons of the year, as well as their frequencies, probabilities and patterns of occurrence. (Translator)

Kudryavtsev, N. F.
THE CURRENT INFLUENCE ON THE DEPTH OF AUTOMATIC STATION RECORDERS (O Vozdeistvii Techeniya na Glubinu Progruzheniya Samopistsev Avtonomnykh Stantsii) tr. by M. Slessers. 1963 [22p] 3refs NOO Trans-127
Order from OTS or SLA $2.60 63-23584

Trans. of Problemy Arktiki i Antarktiki (USSR) 1959, no. 1, p. 11-23.

DESCRIPTORS: *Ocean currents, *Oceanographic equipment, Automatic, *Recording systems, Buoys, Depth indicators, Anchors (Marine), Cables (Mechanical), Equations, Mathematical analysis.

The effect of current on the depth of current self-recorders at automatic observation stations is discussed in connection with the speed of current, the depth of the sea, the length and weight of the cable, the instruments suspended on it, and other factors. The relationships of the magnitudes are defined by mathematical equations so as to present a comprehensive analysis of the problem. (Translator's abstract)

Kudryavtsev, N. F.
ON THE ACCURACY OF CURRENT MEASUREMENTS BY THE NAVIGATIONAL METHOD (O Tochnosti Izmereniya Techenii Navigatsionnym Sposobom) tr. by M. Slessers. 1963 [5p]
NOO Trans-128.
Order from OTS or SLA $1.10 63-23585

Trans. of Problemy Arktiki i Antarktiki (USSR) 1959, no. 1, p. 116-118.

DESCRIPTORS: *Ocean currents, Velocity, Ships, Position finding, Radio navigation, Measurement, Oceanology.

The records of phasometric radio-interference navigating devices are analyzed with respect to accuracy and compared to dead reckoning results, from which the current vector is determined. The accuracy of current measurements, which depends on the accuracy of observed and calculated values of the ship's course, is appraised, pointing out the advantages and disadvantages of the method. (Translator's abstract)

Muromtsev, A. M.
THE PRINCIPAL HYDROLOGICAL FEATURES OF THE PACIFIC OCEAN, tr. by A. Birron and Z. S. Cole. 1963, 412p 29refs PL-480 Int.
Order from OTS $4.25 63-11065

Trans. of mono. Osnovnye Cherty Gidrologii Tikhogo Okeana, Leningrad, 1958 [295p].

DESCRIPTORS: *Pacific Ocean, *Oceanology, Temperature, Salinity, Density, Oxygen, Water, Classification, Ocean currents, Oceanographic data.

The monograph describes the contemporary state of the hydrological study of the Pacific Ocean, presenting a quantitative and qualitative description of the deep water observations carried out in it. Temporal and spatial variations in temperature, salinity, and density, and the vertical gradients of these factors, as well as of oxygen content, are considered on the basis of recorded data amassed in the Pacific Ocean between the years 1804 and 1955. The waters of the Pacific have been classified and a general scheme has been given for their circulation. (Soviet publisher's note)

Paramonov, A. N.
THE USE OF PRINCIPLES OF DISCRETE CALCULATION FOR RELAYING THE DATA OF DEEP WATER MEASUREMENTS. 19 Feb 62 [9p] (figs omitted)
JPRS: 12552.
Order from OTS or SLA $1.10 63-24254

Trans. of Okeanologiya (USSR) 1961, v. 1, no. 4, p. 710-716.
Another trans. is available from OTS or SLA $1.10 as 62-24867, DSIR NLL M.4823 [1962] [7p]

DESCRIPTORS: *Oceanographic equipment, *Depth indicators, Underwater sound, Counting methods, Underwater radio transmission, Electronic equipment, Circuits, *Transducers (Acoustics),

Sysoev, N. N.
DEVELOPMENT OF TECHNIQUE AND METHODS OF WORK AT ANCHOR STATIONS TO OBSERVE OCEAN CURRENTS. [1963] [35p] 17refs
Order from OTS or SLA $3.60 63-20133

Trans. of [Akademiya Nauk SSSR]. Institut Okeanologii. Trudy, 1957, v. 25, p. 7-24.

DESCRIPTORS: *Oceanographic vessels, *Oceanographic equipment, *Anchors (Marine), Mooring, *Ocean currents, Oceanology, Measurement,

Experimental studies conducted from the oceanographic vessels of several nations to ascertain accurate methods for the measurement of ocean currents are presented. Results of experiments designed to calculate an effective deep-water anchor system (the holding power of the anchors and the construction of the deep-water cable) and the good operation of a deep-water anchor winch are given. And finally, it is recommended that in order to obtain the maximum holding power of the anchor it is essential that the direction of the pull should be parallel with the bottom. This can be achieved by inserting, between the anchor and the anchor cable a section of heavy anchor chain, which, lying on the bottom, will assure the best conditions for the operation of the anchor.

Physics of the Atmosphere

Devyatova, V. A.
HIGH-ALTITUDE PROBING OF THE ATMOSPHERE ON THE IL-28 AIRPLANE [Vysotnoe Zondirovanie Atmosfery na Samolete II -28]. 18 July 63 [18]p. FTD-TT-63-534.
Order from OTS or SLA $1.60 63-23719

Unedited rough draft trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1962, no. 43, p. 47-56.
Another trans. is available from OTS or SLA $1.60 as 63-19281, AID-T-63-54, 1 May 63 [14]p.

DESCRIPTORS: *Atmospheric sounding, *Airplanes, *Research planes, Meteorological instruments, Design, Operation, Flight paths, Scientific personnel, Meteorology.

The article is devoted to a new kind of aircraft probing of the atmosphere. A description is given of the equipment of the high-altitude probing aircraft Il-28, its system of flying, the observations in flight, and the particulars of the working of the recording tape of K4-51 automatic optical recorder. (Author)

Gershenzon, G. S. and Manuilov, K. N.
ON THE RATE OF DETECTING TEMPERATURE GRADIENT CHANGES BY MEASURING INSTRUMENTS. 2 July 63 [5]p. 1 ref. FTD-TT-63-540.
Order from OTS or SLA $1.10 63-23821

Unedited rough draft trans. of N[auchno]-I[ssledovatel'skii] Institut Gidrometeorol[ogicheskogo] Priborostr[oeniya]. Trudy (USSR) 1961, no. 10, p. 99-100.

DESCRIPTORS: *Temperature sensitive elements, Effectiveness, Atmospheric sounding, Atmospheric temperature, Vertical indicators, Thermometers.

This report is devoted to the problem of explaining the ability of the instrument to react to changes in rate of heating or cooling and object of measurement, i. e. in case of change in vertical temperature gradient during vertical sounding the atmosphere. (Author)

Ivanov-Kholodnyi, G. S.
IONIZATION OF THE UPPER ATMOSPHERE BY SHORT-WAVE SOLAR RADIATION (Ionizatsiya Verkhnei Atmosfery Korotkovolnovym Izlucheniem Solntsa) tr. by Zanis Stuberovskis. Feb 63 [36]p. 63 refs. E-T-R-63-1.
Order from OTS or SLA $3.60 63-23764

Trans. of Geomagnetizm i Aeronomiya (USSR) 1962, v. 2, no. 4, p. 674-687.

DESCRIPTORS: *Upper atmosphere, *Ionosphere, *Ionization, *Solar radiation, Diurnal variations, Absorption, Equations, Mathematical analysis.

Taking into account new data about the energy and spectrum of short-wave solar radiation, the absorption of radiation and the rate of ion-formation in the atmosphere at heights of 100-800 km were calculated for different times of the day. The peak of ion-formation was detected at a height of $\sim$ 120 km, and the diurnal variation of h_e in the E, F1 and F2 regions is explained. The effect of the daytime increase in the density of the upper atmosphere (asymmetric with respect to midday) was examined; this made it possible to explain a number of ionospheric effects. Conclusions are drawn concerning the value of the effective coefficient of recombination. (Author)

Monin, A. S.
TURBULENT DIFFUSION IN THE GROUND LAYER OF THE ATMOSPHERE, tr. by A. S. Dyer. May 62 [26p] 4refs AWRE/Trans/34.
Order from OTS or SLA $2.60 63-24007

Trans. of A[kademiya] N[auk] SSSR. Izvestiya. Seriya Geofizicheskaya, 1956, no. 12, p. 1461-1473.

DESCRIPTORS: *Turbulence, *Atmosphere, *Diffusion, Smokes, Partial differential equations, Temperature, Mathematical analysis

Solutions of the hyperbolic equation of turbulent flow in the near ground layer of air with indifferent stratification are investigated. As an example the diffusion of smoke at ambient temperature from a chimney is examined. The generalised expression for diffusion is indicated for cases with arbitrary temperature stratification of the air. (Author)

ENGINEERING

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 323 (ELECTRONICS, ENGINEERING, AND SPACE RESEARCH SERIES) 15 Oct 63, 33p JPRS: 21458.
Order from OTS $1.00 63-31942

Consists of abstracts of articles from selected scientific and technical journals of East Germany.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, East Germany, Numerical methods and procedures, Noise generators, Control theory, Data processing systems, Remote control systems, Industrial training, Meteorological instruments, Metallurgy, Optics, Programming languages, Lasers, Transformers, Switching circuits, Sealing compounds, Electron tubes, Ceramic materials, Glass.

ABSTRACT FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 331 (ELECTRONICS, ENGINEERING AND SPACE RESEARCH SERIES). 24 Oct 63, 23p JPRS: 21582.
Order from OTS $0.75 63-31995

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia.

DESCRIPTORS: *Abstracts, *Electronics, *Engineering, Space flight, Bibliographies, Czechoslovakia, Computer logic, Petroleum industry, Servomechanisms, Resistors, Electric cables, Television, Reliability (Electronics), Transistors, Storage batteries, Circuits, Electronic switches, Tunnel diodes, Rectifiers, Thermostats, Amplifiers, Microwave equipment, Dielectrics, Circuits, Satellites(Artificial), Lasers, Manometers, Modulators, Band-pass filters, Luminescence, Thermoplastics, Coils, Inductance, Transformers,

HANGER FOR SUPPORTING SHELVES, CABINETS AND THE LIKE, tr. by E. B. F. 31 Jul 63, 7p (figs omitted) 1ref
Order from OTS or SLA $1.10 63-23581

Trans. of Norweigan patent 94,965, cl. 34i-15/05, int[ernat'l] cl. A47b, by Gustav Bahus Eftf. A/S, appl. 16 Aug 58, granted 12 Sep 59, pub. 9 Nov 59.

DESCRIPTORS: *Mounting brackets, Structural parts.

The invention relates to a hanger for supporting shelves, cabinets or the like, adjustable at any desired level on a wall support, floor stand or the like, a row of openings being provided in the side of the support for receiving one end of the hanger. (Author)

Duda, Theodor.
FLYWHEEL FOR GYROSCOPES. 9 Aug 63 [5p] FTD-TT-63-602.
Order from OTS or SLA $1.10 63-24045

Unedited rough draft trans. of Czechoslovakian patent 93,618, cl. 42c, 25/51, 15 Jan 60.

DESCRIPTORS: *Gyroscopes, *Flywheels, Magnets, Design, Operation,

The invention concerns a flywheel for gyroscopes, in which a rotating mercury ring is used, characterized by the fact, that it is formed by a certain permanent magnet its pole attachments forming a closed annular space filled with mercury isolated from the walls of this space by a layer of enamel and insulation inserts which carry conductive disks connected with the source of DC current. The pole inserts form more ring shaped closed spaces. (Author)

Hansen, J. and Raudenkelb, L.
RECOMMENDATIONS FOR THE ASSESSMENT OF RADIOGRAPHS OF WELDS IN SHIPBUILDING. Oct 63.
Order from BISI 15s BISI-3389

Trans. of Schweissen und Schneiden (West Germany) 1962, v. 14, no. 11, p. 480-482.

DESCRIPTORS: *Ships (Nonmilitary), Construction, Welding, *Welds, *Radiography.

Hedrich, Stefan H.
RULING APPARATUS, tr. by F. H. B. 20 May 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19614

Trans. of German patent 816,506, cl. 70c, gr. 11, pat. from 1 Jan 49, granted 16 Aug 51, pub. 11 Oct 51.

DESCRIPTORS: *Drafting, Design, *Tools (Mathematical).

The invention relates to a hatching and ruling apparatus which, notwithstanding its most simple structural design, is based on a mechanical, semi-automatic process that ensures absolute precision in parallelism and spacing of the lines as well as simple and rapid operation. The invention aims at the production of an apparatus combining with its absolute accuracy and increased speed in the operation the advantages of a simple manipulation, handiness and low manufacturing costs, so that it is also suitable for general use in schools. (Author)

Hoffmann, Alfred.
APPARATUS FOR GEOMETRICAL DRAWING, PARTICULARLY DRAFTING TRIANGLE, tr. by F. H. B. 21 May 63, 5p. (figs. omitted).
Order from OTS or SLA $1.10 63-19615

Trans. of German patent 824,004, cl. 70e, gr. 11, pat. from 31 Dec 48, granted 31 Oct 51, pub. 6 Dec 51.

DESCRIPTORS: *Drafting, Design, *Tools (Mathematical).

By means of the invention, hatchings at any desired angle can be carried out without the aid of a T square or a drafting machine. (Author)

Maizel', M. B.
HEXAMEMBRANE PRESSURE SENSING ELEMENT. 25 July 63 [5]p. 3 refs FTD-TT-63-654.
Order from OTS or SLA $1.10 63-23790

Unedited rough draft trans. of #Priborostroenie (USSR) 1962, no. 12, p. 24.

DESCRIPTORS: *Membranes, *Diaphragms (Mechanics), Pressure, *Pressure gages, Sensitivity, Design, Measurement,

A multimembrane pressure sensing element, comprised of six membranes over each one of which is glued on a measuring bridge, is described. The operation of the sensing element is based on the addition of the unbalance signals from all six bridges by a multibridge circuit. It is confirmed experimentally, that for identical membranes during the adding of imbalance signals from several measuring bridges the total sensitivity of the sensing element is equal to the sensitivity product of one membrane element per number of elements. Practice shows, that membranes (or diaphragms) with tensometric bridges glued on them appear to be quite reliable sensitive elements.

Zabolotskii, V. N.
METHOD OF AUTOMATICALLY MEASURING SMALL DEVIATIONS IN PITCH OF DETAILS WITH PERIODIC STRUCTURES. 17 June 63 [4]p. FTD-TT-63-500.
Order from OTS or SLA $1.10 63-23434

Unedited rough draft trans. of Russian patent 145,011 (appl. 696,354/24, 6 Feb 61).

DESCRIPTORS: *Measuring devices (Electrical and electronic), Light, *Beams (Electromagnetic), Design, Operation.

The invention involves a method for automatically measuring small deviations in pitch (spacing) of details with periodic structures, e.g. spirals of slowing down LBV lines, distinguished by the fact, that for the purpose of rapidly measuring pitch deviations, two light beams are compared, the value of one of them is constant and proportional to mean pitch and the value of the second one changes in conformity with the pitch of the investigated detail. (Author)

Aeronautical Engineering

CALCULATED TO THE LAST QUART: AVIATION ENGINES CONSTANTLY UNDER CONTROL FOR FUEL CONSUMPTION (Bis auf den Letzen Liter Berechnet (Flugzeugmotoren unter Ständiger Kraftstoffkontrolle). [1963] [3p]
Order from SLA $1.10 63-20022

Trans. of a reprint from 1940, no. 2.

DESCRIPTORS: *Airplane engines, *Fuel consumption, *Meters, Aviation fuels.

Flügge-Lotz, I. and Küchemann, D.
COMPREHENSIVE REPORT ON DOWNWASH MEASUREMENTS WITH AND WITHOUT PROPELLER SLIPSTREAM. [1963] [39p] (foreign text included) 3refs
Order from OTS or SLA $3.60 63-20494

Trans. of mono. Zusammenfassender Bericht über Abwindmessungen Ohne und mit Schraubenstrahl, n.p., 1938, p. I 172-I 193. (PB-24546)

DESCRIPTORS: *Downwash, Propellers (Aerial), *Stabilizers (Horizontal tail surface), Wings.

Glazkov, V.
AN-24: OPERATIONAL FEATURES. 22 Aug 63 [10p] FTD-TT-63-791.
Order from OTS or SLA $1.10 63-24048

Unedited rough draft trans. of Grazhdanskaya Aviatsiya (USSR) 1963 [v. 20] no. 5, p. 10-11.

DESCRIPTORS: *Tubopropeller jet engines, *Commercial planes, Aerodynamic characteristics, Aeronautics, Engineering, Tests, *Airplanes, Transport planes, Operation.

Topics include: the An-24 and the Il-14, their differences, technical flight data requirements with respect to ground solidity of the airport, taxi tracks, parking areas; characteristics of interrupted take-off; air temperature and rate of climb of aircraft; influence of centering on angle of pitch; starting aircraft engines at airports of local air lines; and recommendations, suggestions.

Kazandzhan, P. K. and Kuznetsov, A. V.
TURBOPROP ENGINES: [WORKING PROCESS AND OPERATIONAL CHARACTERISTICS]. 23 Sep 63 [349p] 11refs FTD-TT-62-767.
Order from OTS or SLA $19.75 63-24038

Unedited rough draft trans. of mono. Turbovintovye Dvigateli: Rabochii Protsess i Ekspluatatsionnye Kharakteristiki, Moscow, 1961, 264p.

DESCRIPTORS: *Turbopropeller jet engines, *Airplane engines, Engine structures, Design, Operation

The book discusses the construction and operating principle of a turboprop engine; the various structural diagrams for TVD (turboprop engines) are described in understandable form, as are the operating conditions for the individual units of such an engine. The material pertaining to the physical processes taking place within the engine is presented in systematic order. Particular attention has been devoted to the operational characteristics and problems of TVD control. The material contained in the book is based on data gathered from non-Soviet aviation-engine construction practice. Problems of the future are described from the standpoint of non-Soviet opinions. (Author)

Lotkin, O. I.
APPLICATION OF GALERKIN'S METHOD IN DESIGNING AN AIRPLANE WING AGAINST FLUTTER. 19 Sep 63 [11p] 6refs FTD-TT-63-739.
Order from OTS or SLA $1.60 63-24043

Unedited rough draft trans. of Akademiya Nauk SSSR. Institut Mekhaniki. Inzhenernyi Sbornik, 1950, v. 6, p. 153-160.

DESCRIPTORS: *Airplanes, *Wings, Flutter, Aeronautics, Engineering, Aerodynamic loading, Equations, Design, Differential equations.

Seleznev, V. P.
NAVIGATION INSTRUMENTS. 3 June 63 [761]p. 101 refs. FTD-TT-62-1414.
Order from OTS or SLA $31.00 63-23532

Unedited rough draft trans. of mono. Navigatsionnye Ustroistva, Moscow, 1961, 615p.

DESCRIPTORS: *Navigation, Instrumentation, Theory, Compasses, Position finding, Automatic navigators, Doppler navigation, Sextants, Inertial navigation, Space navigation.

The book acquaints the readers with the principles of aerial navigation, including problems in space navigation. It contains an exposition of the theoretical

principles and a description of the material means tor aerial navigation and astronomic orientation relative to the earth and in interplanetary space. Particular attention is paid to unified course systems, to height-velocit central units, to Doppler velocity measuring instruments, different navigational automatic devices for path calculation and to astronomic orientation devices. The theoretical principles and the constructions of gyroscopic inertial, stellar-inertial, and complex navigation systems are given. (Soviet editor's note)

Zborowski, Helmut Ph. von.
IMPROVEMENTS IN DUCTED-AIRFOIL AIRCRAFT, ESPECIALLY ANNULAR WING AIRCRAFT, tr. by L. A. N. 17 Jul 63, 7p (figs omitted).
Order from OTS or SLA $1.10 63-23566

Trans. of French patent 1,193,847, gr. 6, cl. 4, internat'l cl. B64 c, appl. 26 Mar 58, granted 4 May 59, pub. 5 Nov 59.

DESCRIPTORS: *Aircraft, Ring wings, Duct inlets, Airfoils, Vertical take-off planes, Roll, Stability, Design.

The invention relates to improvements in ducted-airfoil aircraft, especially to annular wing aircraft. In order to impart to ducted airfoil aircraft a roll stability inherent in the structure, improvements consist principally in providing the airfoil of said aircraft with at least one boundary layer separator in the upper region of the airfoil, preferably substantially in the median vertical longitudinal plane of the airfoil in question. The invention relates more particularly to a certain form of application (application to annular wing aircraft) as well as to certain embodiments of the aforesaid improvements; and it relates still more particularly, as new products of manufacture, to aircraft of the type in question comprising application of these improvements, as well as to the elements and special tools pertaining to their production. (Author)

Chemical Engineering

SUBSTITUTED UREAS AND PROCESS FOR PREPARATION OF THE SAID PRODUCTS, tr. by J. R. P. 25 June 63, 6p.
Order from OTS or SLA $1.10 63-23163

Trans. of French patent 919,464, gr. 14, cl. 1, to J. R. Geigy SA, of Switzerland, appl. filed 27 Dec 45, pat. granted 25 Nov 46, pub. 10 Mar 47 (priority claimed: Switzerland, 28 Dec 44).

DESCRIPTORS: Substitutes, *Urea, Ureides, Chemical reactions, Sulfonyl radicals, Amines, Catalysts, Reagents, Chemical industry.

The invention concerns a process for preparation of substituted derivatives of urea, characterized in that aromatic or araliphatic N-sulfonylureas are combined with amines or their salts; as well as products prepare according to the process and materials (textiles, etc.) treated with the products.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 119. 18 Oct 63, 65p JPRS: 21494.
Order from OTS $1.75 63-31960

Consists of 17 articles from 1963 issues of Russian journals and newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, Plastics, Barium compounds, Hydroxides, Tires, Industrial plants, Fibers (Synthetic), Sodium compounds, Chromates.

USSR INDUSTRIAL DEVELOPMENT: SOVIET CHEMICAL INDUSTRY NO. 120. 22 Oct 63, 9p JPRS: 21552.
Order from OTS $0.50 63-31988

Consists of translations of 48 selected brief articles from 1963 issues of 19 Russian newspapers.

DESCRIPTORS: *Industrial production, *Chemical industry, *Chemical engineering, *Carbon black, *Rubber, *Plastics, *Fibers (Synthetic), *Glass textiles, *Fertilizers, *Coatings, *Chromium compounds, *Poisons, Awards, Scientific organizations.

Chorine, N. G.
EVALUATION OF THE THERMAL BALANCE OF AN INORGANIC FABRICATION COMPLEX. [1963] 20p. (figs. formulae omitted).
Order from SLA $1.60 63-16216

Trans. of Dechema Monographien (West Germany) 1956, v. 26, p. 238-259.

DESCRIPTORS: *Furnaces, *Towers (Chemistry), *Heat transfer, *Sodium compounds, *Phosphates, *Phosphoric acids, Manufacturing methods, *Thermodynamics,

Dufour, René, Verron, Marcel, and Magoarou, Alphonse-Gabriel le.
IMPROVEMENT IN THE MANUFACTURE OF MANGANESE DIOXIDE BY ELECTROLYSIS. [1963] [15p] 5refs
Order from OTS or SLA $1.60 63-20331

Trans. of French patent 1,253,363, 2 Jan 61, internat'l cl. B01 K-C01 g.

DESCRIPTORS: *Manganese compounds, *Dioxides, *Electrolysis, Cathodes, Manufacturing methods

A method is proposed for the perfection in the production of manganese dioxide by electrolysis caracterized by the fact that a systematic application of a double cathode is used. This double cathode has one part which is in direct contact with the bath and another part which is covered with natural MnO_2. Or, what results in the same: a single cathode of which one part of the surface is uncovered and another part covered with natural MnO_2. These two surfaces are called the two cathode zones. Arrangements for the operation of the installations are also described. (Author)

Kachanak, S. and Valtyni, J.
THE EFFECT OF TEMPERATURE ON THE DYNAMICS OF ADSORPTION IN CONTINUOUSLY OPERATED COLUMNS, PT. I. [1963] 11p
Order from ATS $13.85 ATS-33Q72SK

Trans. of Chem[icke] Zvesti (Czechoslovakia) 1962, v. 16, no. 7, p. 505-515.

DESCRIPTORS: *Towers (Chemistry), Adsorption, Dynamics, Temperature.

Kunugita, E., Otake, T., and Yamanishi, T.
MIXING CHARACTERISTICS OF GAS AND LIQUID FLOWING THROUGH GAS-LIQUID-PACKED BEDS. [1963] 15p
Order from K-H $15.00 K-H 12757

Trans. of Kagaku Kogaku (Japan) 1962, v. 26, no. 7, p. 800-806.

DESCRIPTORS: *Fluidized solids, Liquids, Mixtures, *Fluid flow, *Gas flow.

Mostofin, A. A. and Sorokina, N. S.
TsKTI SALINOMETERS WITH DEGASSING AND CONCENTRATION OF THE SAMPLES. [1963] [9p] C. E. Trans. 2714.
Order from OTS or SLA $1.10 63-24081

Trans. of Teploenergetika (USSR) 1961, v. 8, no. 4, p. 85-89.

DESCRIPTORS: *Salinometers, Feed water, Boilers, Power plants (Establishments), Steam, Salinity, Design.

Salinometers are described which may be used for the continuous operational control of the water regime in present-day power stations, and especially power stations with once-through boilers, These are built in four versions, viz.: to control the quality of the superheated steam, the feed water of once-through boilers, the distillate of evaporators and the turbine condensate.

Nisel'son, L. A.
HIGH PURITY REFINING OF SILICON TETRACHLORIDE AND TRICHLOROSILANE BY THE RECTIFICATION METHOD. 6 Sep 63, 7p. 15 refs. JPRS: 20944.
Order from OTS $0.50 63-31685

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tsvetnaya Metallurgiya (USSR) 1963 [v. 6] no. 2, p. 133-138.

DESCRIPTORS: *Silicon compounds, *Chlorides, *Silanes, *Purification, Impurities, Distillation, *Distilling plants.

A survey of the literature is presented with emphasis on the following factors which should be considered in selecting a column design: the values of the relative volatilities of impurities, the number of theoretical column stages, and the value of the phlegma number. Other factors discussed include the mass exchange intensity index, the physico-chemical properties of the material to be rectified, and peculiarities of the rectification of the particular material. The introduction of extragents is proposed as a method of altering the value of the relative volatility of the impurities because some of the impurities have relative volatilities close to one, which limits rectification of $SiCl_4$ and trichlorosilane.

Tagawa, K., Iimo, S., and Ohta, H.
THE FRACTIONATION OF NONIONIC SURFACTANTS BY MOLECULAR DISTILLATION. Pt 1 of Molecular Distillation and Properties of Nonionic Surfactants. [1963] 20p 7refs
Order from SLA $1.60 63-20244

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, p. 1260-1265.

DESCRIPTORS: *Distillation, *Surface-active substances, Ethylene oxide, Molecules, Distilling plants, Statistical distributions, Stearic acids, Centrifuges.

The ethylene oxide adducts of four different compounds, i.e. the adduct of nonyl-phenol containing an average of 7.5 moles ethylene oxide, the adduct of octylphenyl, with an average of 10 moles, the adduct of oleyl alcohol with an average of 7 moles and the stearic acid adduct with an average of 4 moles, were prepared. Molecular distillation of these adducts was carried out using a centrifugal molecular still. The molecular weight and the number of moles added were obtained in each case, from the hydroxyl numbers of each fraction. The distribution curves for the number of moles of ethylene oxide added were obtained from these values and are discussed. Each fraction of the ethylene oxide - stearic acid adducts were assumed to be a mixture of three components, and the ratios of the three components were calculated from the saponification numbers and hydroxyl numbers for each fraction. It was found that the ethylene oxide adducts of stearic acid consist of 50% monoester, 40% diester and 10% free polyethylene glycol and that the distribution of ethylene oxide to each fraction (of the number of moles added) approximately followed a Poisson distribution. (Author)

Tsyganok, I. I. and Vanyukova, L. A.
SULFUR COMPOUNDS FROM THE ALUMINUM CHLORIDE COMPLEX OBTAINED IN REFINING SULFUROUS GASOLINE. [1963] 4p
Order from OTS or SLA $1.10 62-14106

Trans. of Vostochnaya Neft' (USSR) 1940, v. 2, no. 9, p. 36-38.
An abstract trans. is available from OTS or SLA $1.60 in 61-20355 [1961] 11p.

DESCRIPTORS: *Sulfur compounds, Aluminum compounds, Chlorides, *Gasoline, Complex compounds, Decomposition, Distillation Desulfurization, Films, Sulfides, Organic compounds.

A laboratory investigation is reported of the aluminum chloride sludge obtained in desulfurization of gasoline

with aluminum chloride by the method developed at the Central Institute of Aviation Fuels and Oils. The liberated organic substances were found to consist mainly of sulfides. The sulfur compounds of the sludge are thought to be of possible industrial use, for instance, in the rubber industry. The residue possesses film forming properties. (Author)

Tyuraev, I. Ya.
DEVELOPMENT OF THE BASES FOR A PROCESS OF INDUSTRIAL DEHYDROGENATION OF PARAFFIN HYDROCARBONS. [1963] [9p] 10refs
Order from OTS or SLA $1.10 63-20253

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Khim[iya] i Khim[icheskaya] Tekhnol[ogiya] (USSR) 1959, v. 2 [no. 5] p. 797-802.

DESCRIPTORS: *Towers (Chemistry), Design, Hydrocarbons, Alkanes, *Propanes, *Butanes, *Dehydrogenation, Reaction kinetics, Alkenes, *Propenes, *Butenes, Production, *Catalysts, Fluidized solids.

Constants in equations for n-butane dehydrogenation rate and constant in equation for kinetical cracking, which is a side reaction, were determined with one of the industrial catalysts. The effect of reactor apparatus type on the process for dehydrogenation of paraffin hydrocarbons was investigated. The effect of hydrodynamic conditions in reactor with fluidized catalyst bed (boiling layer) on the propylene yield per pass was shown by the example of propane dehydrogenation. It was found, that in counter-current reactor with moving layer of spheroidal catalyst the most favorable conditions existed, assuring a high olefin yield per pass and a high process selectivity. (Author)

Urbain, Edouard.
THE INDUSTRY OF PHOSPHORIC ACID IN ITS RELATION TO THE MANUFACTURE OF ACTIVE CARBONS. Paper presented at the conference in Mulhouse, 28 Nov 28. [1963] 20p.
Order from SLA $1.60 63-16218

Trans. of Société Industrielle de Mulhouse. Bulletin (France) 1929 [v. 95] p. 325-343.

DESCRIPTORS: *Chemical industry, *Phosphoric acids, *Potassium compounds, *Phosphates, *Activated carbon, Manufacturing methods, Towers (Chemistry), Furnaces, Design,

Valashek, E. R. and Zeifman, V. I.
NEW PRINCIPLES IN THE ORGANIZATION OF SMALL-SCALE PRODUCTION [AND] PRINCIPLES OF BUILDING AND INSTALLING SMALL-SCALE PRODUCTION UNITS. 14 Aug 63, 14p JPRS: 20635.
Order from OTS $0.50 63-31526

Trans. of Meditsinskaya Promyshlennost' SSSR; 1963 [v. 17] no. 3, p. 23-31.

DESCRIPTORS: *Industrial equipment, *Drugs, Pharmacology, *Chemical industry, Design, Industrial production,

Small-scale production for the chemical-pharmaceutical industry requires universal, mobile and rapidly installed equipment. The installation of stands and stand units is proposed for setting up production equipment. The arrangement and installation of manufacturing equipment is explained, and its effect on the construction design of buildings is noted. (Valashek) Problems peculiar to the production of medicines are the relatively large volume of apparatus needed and the necessity for versatile platforms for the rapid mounting and dismounting of equipment. Separate and sterile facilities for studies in biosynthesis are recommended. Experimental producing units should be combined with finished medicines shops to speed production and distribution of medicines. The current use of large-scale plants for producing control-measurement instruments is inefficient. (Zeyfman)

Vishnevskii, N. E.
REFINING SULFUROUS GASOLINES BY THE CHLORATE METHOD. [1963] 5p 1ref
Order from OTS or SLA $1.10 62-14107

Trans. of Vostochnaya Neft' (USSR) 1940, v. 2, no. 9, p. 38-42.
An abstract trans. is available from OTS or SLA $1.60 in 61-20355 [1961] 11p.

DESCRIPTORS: *Gasoline, Sulfur compounds, *Desulfurization, Distillation, Chlorates, Potassium compounds.

Vogelbusch, Wilhelm.
PROCESS AND APPARATUS FOR RECUPERATION OF VOLATILE MATERIALS FROM SOLUTIONS INTENDED TO BE EVAPORATED, tr. by J. R.-P. 17 Sep 63, 12p (figs omitted) 1ref
Order from OTS or SLA $1.60 63-24116

Trans. of French patent 709,044, gr. 14, cl. 6, filed 2 Jan 31, granted 11 May 31, pub. 1 Aug 31 (appl. filed 2 Jan 30, Germany).

DESCRIPTORS: Evaporation, Solutions, Vaporization, *Alcohols, Recovery, Distillation.

Civil Engineering

EUROPEAN COMMITTEE FOR CONCRETE, INFORMATION BULLETIN NO. 12. [1961] [43p] 3refs
Order from SLA $4.60 61-10140

Trans. of [Comité Europeen du Béton, Paris. Bulletin d'Information] (France) n. d., no. 12.

DESCRIPTORS: *Concrete, Steel, Fracture (Mechanics) Stresses, Tensile properties, Bonding, Load distribution, Corrosion, Reinforcing materials.

Contents:
Notation
General theory for circular bending and for direct tensile force

Comparative examination of the various existing theories
Experimental verification
Simplified practical formulae
Table of permissible crack widths.

EUROPEAN COMMITTEE FOR CONCRETE, INFORMATION BULLETIN NO. 14. [1961] [55p]
Order from SLA $5.60 61-10142

Trans. of [Comité Européen du Béton, Paris. Bulletin d'Information] (France) n.d., no. 14.

DESCRIPTORS: *Concrete, *Reinforced concrete, Failure (Mechanics), Compressive properties, Load distribution, Statistical analysis, Stresses, Steel, Beams (Structural).

Contents:
Statistical interpretation of simple or compound bending tests (according to the recommendations of the European Committee for Concrete): Report of committee no. 1 (tests) by P. Moenaert
Committees no. 1 (tests) and no. 3 (eccentric compression): Report of the joint meeting, Paris, 15 Jan 59
Contribution to the investigation of the influence of experimental dispersions on the accuracy of the ultimate moment, by U. Rossetti
Consideration of a rectangular distribution diagram in the interpretation of the tables of test results of the Rome session, by G. Steinmann.
(See also 61-10140)

Egorov, A. V.
THE NOVOSIBIRSK HYDRO-ELECTRIC STATION IN THE PLAN FOR THE USE OF THE OB RIVER (Novosibirskii Gidrouzel v Skhemye Ispol'zovaniya r. Ohi) tr. by O. R. H. 24 Sep 63, 11p I-2992.
Order from OTS or SLA $1.60 63-24105

Trans. of mono. Opyt Stroitel'stva Novosibirskovo Gidrouzla (Experience in the Construction of the Novosibirsk Hydro-Electric Station) Moscow/Leningrad 1962, p. 7-14.

DESCRIPTORS: *Hydroelectric power systems, *Dams, Rivers, Water traffic, Construction, Power equipment, Power plants (Establishments).

A description is given of the hydro-electric station, the concrete spillway dam, the earthen dams, the navigation installation and the reservoir created by the dam.

Franz, Gotthard.
LOAD-BEARING BEHAVIOR OF BRACKETS AND RESTRAINED BEAMS. [1963] [7p] 5refs
Order from SLA $1.10 63-20308

Trans. of mono. (lecture presented at) the CEB Congress, Wiesbaden, 1963.

DESCRIPTORS: *Beams (Structural), *Mounting brackets, Load distribution, Loading (Mechanics), *Reinforced concrete, Stresses, Mathematical analysis

Brackets, short cantilever beams under a concentrated load at the tpp edge, and restrained beams up to a = h (as, for example, foundations and pilings) should be reinforced using truss analogy. The required cross-section at the point of restraint or at the center of the beam $Fe_Z = \frac{P \cdot a}{\sigma_e \cdot z}$ is continued to the support or under the load as constant and is well anchored there (loop or bond anchorage). Position of the reinforcement should follow the tension trajectory. For better crack distribution and to take up the low tensile stresses in the web horizontal stirrups should be provided with a cross-section $Fe_B = \frac{Fe_Z}{4}$. It is proposed that concrete dimensions be determined by the n-free method. Tests on this subject and to delimit the range of short-long beams have not yet been completed. Dimensions determined by the conventional theory, adhering to allowable flexural and shearing stresses, have proved sufficient in tests to destruction. (Author)

Rösli, A. and Hofacker, H.
TESTS ON THE GLATT BRIDGE AT OPFIKON, tr. by C. V. Amerongen. [1963] 9p C&CA Library Trans. no. 106.
Order from Cement and Concrete Association, 52 Grosvenor Gardens, London SW1 £1

Trans. from Association of Swiss Cement, Lime and Gypsum Manufacturers. Annual Report, 1960.

DESCRIPTORS: *Bridges, *Loading (Mechanics), Fatigue (Mechanics), Failure (Mechanics), Tests.

Rydberg, John.
BLOWING AIR INTO ROOMS THROUGH PERFORATED SUSPENDED CEILINGS. Sep 63, 15p 11refs
Order from SLA $1.60 63-20385

Trans. of Gesundheits-Ingenieur (West Germany) 1963, v. 84, no. 2, p. 33-38.

DESCRIPTORS: Buildings, *Ventilation, *Ventilation ducts, Air, *Gas flow, Heating, Roofs,

Topics include: injection of warm air or air of the same temperature as room air; injection of cold air (at normal room height); correction for thermal forces if one deals with very high rooms; perforations with random designs; slot or perforated small ribbons.

Shulga, V. Ya.
A NEW TYPE OF TRACK UPPER STRUCTURE. [1963] [6p] (3 figs omitted)
Order from OTS or SLA $1.10 63-20379

Trans. of Zheleznodorozhnyi Transport (USSR) 1963 [v. 45, no. 3] p. 52-54.

DESCRIPTORS: *Railroad tracks, *Reinforced concrete Beams (Structural), *Foundations (Structures),

Experiments with reinforced concrete block-based railroad tracks confirms the expected stability of the type of track, its protection of the ballast from contamination and a significant drop in requirements both of labor and material for track maintenance.

AUTOMATIC TELEVISION BROADCASTING STATION TRSA-56. 20 Aug 63 [4p] FTD-TT-63-698.
Order from OTS or SLA $1.10 63-24023

Unedited rough draft trans. of a Ukrainian mono (rept. Televiziyina Retranslyatsiyna Avtomatychna Stantsiya TRSA-56, n.p., n.d. (rept. no. X 1885).

DESCRIPTORS: Automatic, *Televsion stations, Television transmitters, Design, Operation, Control systems.

The automatic TV broadcasting station is intended for reception of TV transmissions on a radius of 100-200 km from the TV broadcasting station and for subsequent relay of the same over another TV channel over a radius of 15: 20 km. As soon as the signal from the broadcast station appears in the other, the TRSA-56 apparatus is cut in automatically. During the relay function the performance of the station is controlled automatically. In case any one of the blocks goes out of commission, the station automatically changes into reserve. After tele transmission is completed the relay is cut off automatically. If in the lines, which connect the control panel with the station, originates some kind of an irregularity, the relay unit changes over onto automatic system of control. Technical characteristics are given. (Extracted)

COMMUNICATIONS NETWORKS. PT. I. REVIEW OF SOVIET LITERATURE: COMPILATION OF ABSTRACTS ON COMMUNICATIONS EQUIPMENT. Rept. no. 3 on AID Work Assignment no. 33. 27 Aug 63 [29p] 11refs AID Rept. P-63-111.
Order from OTS or SLA $2.60 63-23811

DESCRIPTORS: *Communication systems, *Communication equipment, *Multichannel telephone systems, Telephone equipment, Telephone communication systems, *Abstracts, Design, Reviews.

FREQUENCY MEASURER ICH-7. 31 Jul 63 [3p] FTD-TT-63-694.
Order from OTS or SLA $1.10 63-24021

Unedited rough draft trans. of Ukrainian mono. (rept.) Vymiryuvach Chastoty YCH-7, n.p., n.d. (rept. no. 1680).

DESCRIPTORS: *Frequency meters, *Measuring devices (Electrical and Electronic), Oscillation, Operation,

The instrument is intended for measuring frequency of electric oscillations and number of revolutions of rotating devices. Technical characteristics are given.

IMPROVEMENT IN NEGATIVE FEEDBACK PUSH-PULL AMPLIFIERS COMPRISING A COUPLING IMPEDANCE IN THE CATHODE CIRCUIT, tr. by P. C. C. 11 Sep 63, 7p (figs omitted)
Order from OTS or SLA $1.10 63-24117

Trans. of French patent 892,851, gr. 12, cl. 6, by Telefunken Gesellschaft für Drahtlose Telegraphie m.b.H., Germany, filed 25 Mar 43, granted 17 Jan 44, pub. 23 May 44 (appl. filed 25 Mar 42, Germany).

DESCRIPTORS: *Feedback amplifiers, *Push-pull amplifiers, Electrical impedance, Coupling circuits, Cathodes (Electron tubes).

INSTRUMENT FOR MEASURING HF VIDEO AMPLIFICATION KH 2-1. 30 Jul 63 [3p] FTD-TT-63-695.
Order from OTS or SLA $1.10 63-24019

Unedited rough draft trans. of Ukrainian mono. (rept.) Vymirnyk Perekhidnykh Kharakterystyk Kh 2-1, n.p., n.d.

DESCRIPTORS: *Measuring devices (Electrical and Electronic), High frequency, *Transients, *Video amplifiers, Tuning devices.

The instrument is intended for investigating and tuning the amplifiers in the branch of high frequencies with restoration time from 5×10^{-8} see to 100×10^{-8} see by the transient characteristic, which is observed on the screen of the device. Technical characteristics are given.

MULTIPLE RAPID ELECTRICAL CONNECTOR, tr. by P. C. C. 26 Sep 63, 3p (figs omitted)
Order from OTS or SLA $1.10 63-24125

Trans. of Italian patent 514,965, cl. 9, by S.I.R.E.M. - s.r.l. - Società Impianti Elettro Meccanici, filed 14 Apr 54, granted 11 Feb 55, printed Sep 57.

DESCRIPTORS: *Electric connectors, Electric terminals, Electrical equipment, Design.

The electrical connector has the purpose of effecting rapid electrical couplings on test or inspection benches, electric measurement panels, or in any case where multiple electrical connections must be effected rapidly. (Author)

PHASE BREAK RELAY E-511. 31 Jul 63 [3p] FTD-TT-63-697.
Order from OTS or SLA $1.10 63-24018

Unedited rough draft trans. of Russian mono. (rept.) Rele Obryva Faz E-511, n.p., n.d.

DESCRIPTORS: *Phase control devices, *Relays, Operation.

The phase breaker relay type E-511 is intended for controlling presence of voltage in all phases of a triphase voltage system. The relay reacts to the break of one, two or three phases, regardless of the nature of the load, and does not react to a symmetrical reduction in voltage in three phases to 60% of the rated. Technical characteristics are given.

Aleksandrov, G. N. and Kostenko, M. W.
TRENDS IN E. H. V. TRANSMISSION LINE DEVELOPMENT IN THE SOVIET UNION. [1963] [4p] C. E. Trans. 3131.
Order from OTS or SLA $1.10 63-24100

Trans. of Elektrichestvo (USSR) 1962, no. 11, p. 20-25.

DESCRIPTORS: *Transmission lines, *Electric potential, Power supplies, Electric power production, Electricity.

Bas, E. B.
A NEW FINE-BEAM ELECTRON GUN WITH AN INDIRECTLY-HEATED TUNGSTEN ROD CATHODE AND ION SEPARATION. [1963] 8p. (figs. omitted) 7 refs.
Order from SLA $1.10 63-18757

Trans. of Optik (West Germany) 1955, v. 12, p. 377-384.

DESCRIPTORS: *Electron guns, *Tungsten, *Cathodes, Cathode ray tubes, Ions, Separation, Electron beams, Design, Operation.

The electron gun differs in two essential features from conventional arrangements: (1) Use is made of an indirectly-heated tungsten cathode, the so-called rod cathode. (2) The arrangement enables the positive ions to be separated from the electron beam. (Author)

Basov, N. G. and Oraevskii, A. N.
ON THE POSSIBILITY OF CONSTRUCTING A SEALED-BEAM MOLECULAR OSCILLATOR USING ND_3, NH_2D, AND NHD_2 MOLECULES, tr. by L. J. Holschlag. 23 Aug 63, 9p 13refs APL/JHG TG 230-T364.
Contract NOw 62-0604-c
Order from OTS $0.50 63-11723

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Radiofiz[ika] (USSR) 1958, v. 1, no. 4, p. 63-68.

DESCRIPTORS: *Molecular beams, *Oscillators, Molecules, Ammonium compounds, Deuterated compounds, Construction, *Masers.

A study is made of the possibility of constructing a sealed-beam molecular oscillator using inversion levels of heavy ammonia: ND_3, NHD_2, NH_2D. In order to obtain active molecules in such an oscillator, application of a method of pumping radiation is proposed, using a system of three energy levels. Systems of energy levels for molecules of heavy ammonia ND_3 , NH_2D, NHD_2 have been selected. The theory is given as well as the design of an oscillator for the selected systems of energy levels. (Author)

Behn, Reinhard, Heywang, Hermann, Kammermaier, Johann, and Preissinger, Heinz.
ELECTROCHEMICAL SELF-HEALING IN CAPACITORS WITH METALLIZED DIELECTRICS (Elektrochemische Selbstheilung in Kondensatoren mit Metallisierten Dielektriken). [1963] [13p] (foreign text included) 10refs
Order from SLA $1.60 63-18743

Trans. of Siemens Zeitschrift (West Germany) 1962 [v. 36] no. 11, p. 808-811.

DESCRIPTORS: *Capacitors, *Paper capacitors, *Plastic film, *Metal films, *Dielectrics, Degradation, *Electrochemistry, Oxides.

Evidence is presented for the existance of self-healing in metallized plastic film or paper capacitors by the electrochemical deposition of metallic oxides around pores and spark punctures. The investigations indicate that the phenomenon may be utilized to increase the operational safety of capacitors with metallized dielectrics.

Bulitko, A. D., Deryugin, F. F., and Zarichnaya, A. N.
INSTRUMENT FOR LOCATING THE PROBABLE POSITION OF A TRANSMISSION LINE FAULT. [1963] [6p] C. E. Trans. 2959.
Order from OTS or SLA $1.10 63-23977

Trans. of Elekt[richeskie] Stantsii (USSR) 1962, v. 33, [no. 5] p. 48-50.

DESCRIPTORS: *Transmission lines, *Failure (Mechanics), Determination, *Ammeters, Design, Operation.

The basic circuitry and output characteristics of the AI-2 device (pulse ammeter), used to locate faults in transmission lines by registering the zero-sequence current of a line, are discussed. The basic element of the device is a mass-produced millicoulomb meter type M-368.

Dashchenko, I. T.
CHEAPER AND FASTER CONSTRUCTION OF POWER SUPPLY NETWORKS. [1963] [4p] C. E. Trans. 2846.
Order from OTS or SLA $1.10 63-23983

Trans. of Elektrichestvo (USSR) 1952, no. 8, p. 18-20.

DESCRIPTORS: *Electrical networks, Power supplies, Power, Transmission lines, Design, Construction.

The problems associated with the design and construction of power systems are reviewed.

Gelfand, Ya. S.
THE STUDY OF TRANSIENT PROCESSES IN CURRENT TRANSFORMERS BY MEANS OF ANALOGUE COMPUTERS. [1963] [8p] 7refs C. E. Trans. 2601.
Order from OTS or SLA $1.10 63-23951

Trans. of Elektrichestvo (USSR) 1961, no. 12, p. 40-44.

DESCRIPTORS: *Transformers, *Transients, Mathematical analysis, *Analog computers, Circuit.

A simplified method of mathematical simulation for investigating transient processes in current transformers and in transformer loads is presented. Features of the method are the simplicity of the block diagram, the small number of amplifiers, the stability of operation, and good accuracy.

Gomonet, Edouard.
ROLE OF THE VACUUM TECHNIQUE IN THE INDUSTRY OF LUMINESCENT TUBES. [1963] 13p (figs omitted)
Order from SLA $1.60 63-20474

Trans. of le Vide [Technique, Applications] (France) 1948, v. 3, p. 487-495.

DESCRIPTORS: *Luminescence, *Discharge tubes, Low pressure research, Gases, Impurities, Fluorescence, Mercury lamps, Neon, Xneon, Powders, Barium compounds, Oxides, Cathodes (Electron tubes).

Although the gas pressure inside luminescent tubes may be several millimeters of mercury, it is necessary before introducing the desired gas, to create a vacuum in these tubes as in radio tubes. In fact, the least trace of foreign gas can greatly impair the appearance and life of the tube. (Author)

Gorskii, Yu. M. and Manevich, E. M.
A SEMICONDUCTOR REMOTE PHASE-METER WITH TAPE RECORDER ATTACHMENT. [1963] [14p] 2refs C. E. Trans. 2656.
Order from OTS or SLA $1.60 63-24079

Trans. of Elekt[richeskie] Stantsii (USSR) 1962, v. 33, no. 2, p. 75-83.

DESCRIPTORS: *Phase meters, *Measuring devices (Electrical and electronic), Magnetic recording systems, Remote control systems, Transmission lines, Design, *Semiconductor devices, Failures (Mechanics), Detectors.

Greisukh, M. A.
MECHANISM OF FLASHOVER ALONG THE LAYERS OF OIL-PAPER INSULATION IN D. C. SYSTEMS, tr. by F. E. Wallwork. May 63 [20p] 3refs AWRE Trans 39.
Order from OTS or SLA $1.60 63-24064

Trans. of Elektrichestvo (USSR) 1960, no. 7, p. 77-82.

DESCRIPTORS: *Electric insulation, Electric discharges, Oils, Paper, Direct current, Electric potential, Transmission lines, Electrical equipment, Transformers

The discharge process along layers of insulation, under d. c. voltage is materially different from the development of an ionising discharge in the same structure under a. c. voltage. The discharge voltage at industrial frequency is 4 - 6 times less (in amplitude value) than the flashover characteristics under d. c. voltage. Discharge voltages for positive polarity at the outside plate are 20 - 35% less than for negative polarity. Temperature variations in the range 20° - 75°C and also variations in plate-edge thickness in the range 10 - 80u have no effect on the size of the discharge voltage. Flashover characteristics for shielded and exposed plate-edges are identical in type and their values are extremely close to each other. The values for the discharge voltages of individual specimens show a wide statistical scatter. A study of the law of distribution of discharge voltages in the field of greatest scatter (when ℓ = 5 cm) indicates that the safety factor determining the ratio of the average value for flashover voltage to the short-term permissible voltage is 2.5. This factor can be applied with a certain degree of tolerance for the calculation of short-term permissible flashover voltages and field intensities for all the insulation structures surveyed in the present paper. In some cases, however, the values recorded will be found to be rather too low. (Author)

Gul'ko, F. B.
ON ONE PROPERTY OF THE STRUCTURE OF OPTIMAL PROCESSES. [1963] [16p] 6refs
Order from OTS or SLA $1.60 63-20288

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Tekhnicheskaya Kibernetika, 1963, no. 1, p. 41-47.
Another trans. is available from OTS $5.00 in 63-31046, JPRS-19697, 14 June 63, 320p.

DESCRIPTORS: *Control systems, *Optimalization, Calculus of variations, Synthesis.

The paper deals with the theoretical proof of the method for optimal control with the prediction for objects, consisting of first order elements connected in series (linear or with monotonically nonlinear). It is proved that it is necessary for the optimal control of such objects to realize con-secutively the optimal control by a reduced number of elements of the initial object. The obtained results are extended to the case on the restriction of phase coordinates. (Author)

Gurtovnik, A. S.
ON THE THEORY OF THE MOLECULAR GENERATOR, tr. by L. J. Holtschlag. 26 Aug 63, 7p 3refs APL/JHU TG 230-T382.
Contract NOw 62-0604-c
Order from OTS $0.50 63-11713

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Radiofiz[ika] (USSR) 1958, v. 1, no. 5/6, p. 83-87.

DESCRIPTORS: Molecular beams, Molecules, *Cavity resonators, *Mathematical models, Theory, *Masers,

The equations for a molecular generator, are studied by the small-parameter method. It is shown that when the number of active molecules in the cavity of a resonator in the absence of a field is $N_0 < N_{0,}^*$ the molecular generator is in stable equilibrium, and when $N_0 > N_{0,}^*$ the equilibrium state becomes unstable. When N_0 passes through $N_{0,}^*$ there is a soft excitation

of oscillations, nearly sinusoidal, with a frequency near the natural frequency of the resonator. The amplitude of these oscillations increases with N_0. When N_0 continues to increase, the self-oscillations become unstable. It is possible that in such a case more complicated double-periodic motions arise; however, no comparable treatment was given to this question. (Author)

Haenel, Hermann.
DEVICE ELIMINATING IRREGULAR TRAVEL OF ARMATURES FOR ELECTRIC METERS OR THE LIKE, tr. by G. E. 15 Jul 63, 3p (fig omitted) 2refs
Order from OTS or SLA $1.10 63-23577

Trans. of German patent 960,214, cl. 21e, gr. 15, internat'l cl. G 01/r, by Siemens-Schuckertwerke Aktiengesellschaft, pat. from 1 Feb 53, appl. 20 Sep 56, granted 28 Feb 57, pub. 21 Mar 57.

DESCRIPTORS: *Measuring devices (Electrical and electronic), Meters, Armatures, *Electric bridges, Rotation, Velocity, Resistance (Electrical), Calibration.

Wheatstone bridges are provided in at least three approximately radial slots in the armature and are adjustable along the slot. Interchangeable bridges of different resistances are used. The resistance distribution of the rotor is adjusted to where the speed of rotation of the meter armature does not vary within one revolution. This allows exact stroboscopic calibration and testing of the meters.

Hosek, Josef, Makovec, Frantisek and others.
ELECTRIC RECORDER OF MECHANICAL VALUES. 18 July 63 [8]p. FTD-TT-63-75.
Order from OTS or SLA $1.10 63-23659

Unedited rough draft trans. of Czechoslovakian patent 95,034, cl. 42e, 31/03, appl. 18 Aug 58, pub. 15 Apr 60.

DESCRIPTORS: *Liquid level gages, *Pressure gages, Magnetic recording systems, Magnets, Magnetic fields, Probes (Electromagnetic), Semiconductors, Electric currents, Electric potential.

The scanner (recorder) operates on the basis of a magnetic circuit combination, with permanent or electromagnet, and a probe with semiconductive or conductive body, on which, as result of the Hallow phenomenon, originates an electric voltage depending on the vector of magnetic induction in the point of the body and on the orientation of this vector relative to the body (corpuscle). The scanner is arranged for measuring the level in a vessel (reservoir) by connecting the exciting magnetic of the magnetic circuit with the float placed in the vessel. The excessive part of the circuit with Hallow probe is placed from without on the housing of the vessel. The scanner is arranged for recording of pressure by securing the Hallow probe to a pull rod connected with subjective membrane closing the pressure space. The pull rod is placed swingingly so that during the bending of the diaphragm the position of the probe changes in nonhomogeneous magnetic field between two or more poles of intermittent polarity.

Izawa, K.
INTODUCTION TO AUTOMATIC CONTROL. 1963, 260p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Japanese mono., n. p., n. d.

DESCRIPTORS: *Control systems, Automatic, Stability, Synthesis, Servomechanisms, *Automation.

Karandeev, K.
NOVELTIES OF ELECTRONIC ENGINEERING: ON THE ROAD TO THE AUTOMATION OF INTELLECTUAL WORK, tr. by J. B. 14 May 63, 2p.
Order from OTS or SLA $1.10 63-19627

Trans. from Pravda [Moscow] (USSR) 1962, 25 Nov [p. 3].
Another trans. is available from OTS or SLA $3.60 in 63-15389, JPRS-17220, 21 Jan 63 [31]p.

DESCRIPTORS: *Electronics, *Data processing systems, Scientific research, Automatic.

The results of theoretical research on automatic data processing systems and the applications of such systems are described. A system of measuring apparatus for aerial geophysical prospecting is mentioned. In addition, the following systems are constructed or still in the process of development: measuring systems for automation of medical biological research, for obtaining statistical characteristics of sets of radio parts, for determining correlations between examined processes and for obtaining generalized characteristics in the examination of complex subjects.

Kasharskii, E. G.
SKIN EFFECT AND LOSSES IN A LAMINATED STEEL PACK. [1963] [13]p. 3 refs. [DSIR] NLL M.3856.
Order from OTS or SLA $1.60 63-19895

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Tekhn[icheskikh] Nauk. Izvestiya: Energ[etika] i Avtom[atika] 1961, no. 1, p. 62-67.

DESCRIPTORS: *Steel, Surfaces, Hardening, *Laminates, *Electromagnetic properties, Machines, Magnetic properties, Turbines, *Generators, Permeability, (Magnetic).
The work considers the characteristics of skin effect in a narrow and long pack of laminated steel, on which magnetic flux falls perpendicularly to the plane of lamination and then emerges from the pack along the plane of laminations. (Author)

Kazakov, I. E.
ON THE STATISTICAL THEORY OF CONTINUOUS SELF-ADJUSTING SYSTEMS. [1963] [15p] 8refs
Order from OTS or SLA $1.60 63-20382

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Energetika i Avtomatika, 1962, no. 6, p. 76-81.
Another trans. is available from OTS $0.50 as 63-21207, JPRS-17820, 26 Feb 63 [15p].

DESCRIPTORS: *Adaptive control systems, Control systems, Operation, *Statistical processes, Statistical functions, Operators (Mathematics), Differential equations.

Khaldre, Kh. Yu. and Khokhlov, R. V.
ON THE STABILITY OF OSCILLATIONS IN A MOLECULAR GENERATOR, tr. by L. J. Holtschlag. 27 Aug 63, 10p 8refs APL/JHU TG 230-T384. Contract NOw 62-0604-c
Order from OTS $0.50 63-11717

Trans. of Izv[estiya] Vysshikh Uchebn[ykh] Zavedenii. Radiofiz[ika] (USSR) 1958, v. 1, no. 5/6, p. 60-65.

DESCRIPTORS: *Oscillation, Stability, *Molecular beams, Polarization, Equations, Mathematical analysis, *Masers.

The paper is devoted to the study of the operational stability of a molecular generator. The study was carried out on the basis of simplification of shortened equations approximately describing processes in a molecular generator. It is shown that stationary oscillations in a generator are always stable. (Author)

Kharchenko, R. R. and Konchalovskii, V. Yu.
AUTOMATIC METERS WITH ANALOGUE AND DIGITAL OUTPUTS. [1963] [9p] 6refs C. E. Trans. 2789.
Order from OTS or SLA $1.10 63-24084

Trans. of Elektrichestvo (USSR) 1962, no. 4, p. 36-40.

DESCRIPTORS: Automatic, *Meters, *Control systems, Input-output devices, *Analog-to-digital converters, Servomotors.

An account is given of a means of obtaining a digital output in automatic instruments with a servo-motor, not requiring any alteration of the basic construction and providing full preservation of all analogue functions, in particular chart recording functions. This method, as well as providing a digital output, also solves the problem of designing automatic potentiometers and bridges without a slide-wire in the balancing circuit. By employing this method an instrument can be obtained which can accomplish the functions of a local automatic control instrument. (Author)

Khomyakov, M. V.
ELIMINATING CONTAMINATION OF INSULATION IN SUB-STATIONS AND ON OVER-HEAD LINES. [1963] [8p] C. E. Trans. 2919.
Order from OTS or SLA $1.10 63-23971

Trans. of Elekt[richeskie] Stantsii (USSR) 1962 [v. 33] no. 12, p. 51-54.

DESCRIPTORS: *Transmission lines, *Electric insulation, Contamination, Electric discharges, Weatherproofing, Moistureproofing, Oils, Cleaning.

Kostenko, M. V.
WAVE DEFORMATION DUE TO EARTH AND CONDUCTOR RESISTANCE IN A MULTI-CONDUCTOR LINE. [1963] [13p] 10refs C. E. Trans. 2578.
Order from OTS or SLA $1.60 63-23956

Trans. of Elektrichestvo (USSR) 1961, no. 6, p. 5-10.

DESCRIPTORS: *Transmission lines, Electromagnetic waves, Multipath transmission, Distortion, Earth, Conductors, Resistance (Electrical), Mathematical analysis.

Relatively simple formulae are derived for the approximate calculation of the wave deformation in a line. The error of these formulae does not exceed 15% for lines (wave paths) up to 10 km long. To obtain more accurate solutions, the approximate formulae for a deformed front derived in the article are used. The correction for the deformed front is then calculated from the difference between the exact and approximate material frequency characteristics.

Layton, Margaret McKinney, Randels, Robert Basil, and Stockdale, George Fairbank.
ELECTRICAL CAPACITORS (Condensateurs Electriques). [1963] [18p] (foreign text included) 1ref
Order from OTS or SLA $1.60 63-20369

Trans. of Belgian patent 590,495, 4 May 60, by Corning Glass Works (priority claimed: pat. appl. 811,186, 5 May 59, U. S.).

DESCRIPTORS: *Capacitors, Foils, Glass capacitors, Dielectric films, *Glass seals.

The invention concerns electrical capacitors in which the glass strips serving as dielectric are placed between metal foil electrodes, and relates particularly to improvements in sealed capacitors, and to the form of electrical conductors which permit the making of such capacitors. (Author)

Layton, Margaret McKinney, Randels, Robert Basil, and Stockdale, George Fairbank.
ELECTRICAL CAPACITORS AND THEIR MANUFACTURE (Condensateurs Électriques et Leur Procédé de Fabrication). [1963] [24p] (foreign text included) 1ref
Order from OTS or SLA $2.60 63-20367

Trans. of Belgian patent 590,494 [4 May 60] by Corning Glass Works (priority claimed: appl. no. 811,135, filed 5 May 59, U. S.).

DESCRIPTORS: *Capacitors, Glass, Foil, Sheets, *Glass capacitors, *Glass seals, Dielectrics, Electric wire, Iron, Copper coatings, Disks, Ceramic materials.

The invention concerns a hermetically sealed capacitor comprised of electrodes of metallic sheets separated by a dielectric material of thin glass layers having a high Q value. Electrical conductors, made of wires having a ferrous alloy core and coated with copper, are fastened to the electrodes and passed through a glass envelope which encloses and seals the elements of the capacitor. The electrical conductors are sealed by fusion in the glass envelope. A ceramic disk, made of forsterite material and integrally fastened to the surface of the glass envelope, encircles each terminal reinforcing the seal.

Levshunov, R. T.
RESEARCH ON INSULATORS COATED WITH SEMI-CONDUCTING GLAZE. [1963] [13p] 2refs C. E. Trans. 2598.
Order from OTS or SLA $1.10 63-23958

Trans. of Elekt[richeskie] Stantsii (USSR) 1954, v. 25, no. 4, p. 36-41.

DESCRIPTORS: *Electric insulation, *Semiconducting film, *Ceramic coatings, Electrical properties, Electrical engineering.

This article presents a method of increasing the operational reliability of insulators in areas of heavy contamination by coating them with a semi-conducting glaze. Operational experiments established that the semi-conducting glaze distributed the voltage more evenly over the surface of the insulator. And that the insulator was heated by leakage currents giving it better discharge characteristics in unfavorable weather conditions. The semi-conducting glaze used was a ceramic semi-conductor possessing n-type conductivity.

Morgulis, N. D. and Chutov, Yu. I.
EFFECT OF A MAGNETIC FIELD ON PHENOMENA IN A DIODE WITH CESIUM VAPORS. 19 June 63 [17]p. 14 refs. FTD-TT-63-351.
Order from OTS or SLA $1.60 63-23789

Unedited rough draft trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1962, v. 7, no. 9, p. 1003-1012.

DESCRIPTORS: *Diodes (Electron tubes), *Cesium, *Vapors, *Magnetic fields, Cesium electron tubes, Electric discharges, Electric fields, Thermionic converters, Tests, Analysis.

The effect of a magnetic field on an electron short circuit stream and on the characteristics of the entire stream was investigated in a decelerating electric field in a diode with cesium vapors as a close model of a thermoelectron energy transformer; an interpretation is given on the obtained experimental results. (Author)

Muraki, Ichiro and Okajima, Yukio.
EFFECT OF CURRENT DENSITY ON SOME PROPERTIES OF ELECTROLYTIC MANGANESE DIOXIDE. Rept. 4 on Experiments in the Manufacture of Electrolytic Manganese Dioxide. [1963] 15p. 17 refs
Order from SLA $1.60 63-18747

Trans. Kogyo Kagaku Zasshi (Japan) 1961, v. 64, p. 137-141.

DESCRIPTORS: *Electrolytes, *Maganese compounds, *Dioxides, *Dry cells, *Wet cells, Density, Electric potential, *Electrochemistry,

A study was made of the effects of current density on the relationship and adaptability of electrolysis conditions and the quality of manganese dioxide produced. Physical and electrochemical tests, galvanic cell tests and x-ray diffraction examination were run on the system, consisting of an electrolyte containing $MnSO_4$, 136 g./1. and H_2SO_4 20 g./1., at a temperature of 85°C., using a carbon anode and lead cathode while varying the anode current density in the range 0.5 to 3.0 A/dm^2. As a general result of individual tests, the highest quality manganese dioxide was produced at a current density D_A = 1A/dm^2. The tendency is for the quality of the product to decrease with an increase in current density. The quality of manganese dioxide produced at current densities of 1A/dm^2, 2A/dm^2 and 3A/dm^2 was investigated. Investigation of the crystal structure using x-ray diffraction indicated that at a low current density (D_A = 1A/dm^2) the crystal phase was homogeneous and in the α-form. With increased current density, the percentage of β-form had a tendency to increase. (Author)

Naidenov, A. I.
DEVICE FOR REPRODUCTION OF ELECTRICAL SIGNALS OF ULTRA LOW FREQUENCY WITH STANDARD ELECTROMAGNETIC HEADS, DIRECTLY RECORDED ON MAGNETIC TAPE, tr. by H. M. M. 1 Sep 63, 2p (figs omitted) I-3140.
Order from OTS $0.50 63-11707

Trans. of Russian patent 150262, cl. 42g, gr. 169, declared 27 Nov 61 as 753636/26-9, pub. 28 Aug 62 (pub. in #Byulleten' Izobretenii (USSR) 1962, no. 18).

DESCRIPTORS: *Magnetic recording systems, Reproduction, Electricity, Signals, Low frequency, Magnetic tape.

The device is for reproduction of ultra low frequency electrical signals using standard electromagnetic heads to record on magnetic tape. It is distinctive in that magnetic and non-magnetic sections are created on tape by means of periodic erasures of reproductions and that the erasing head is furnished with a camshaft mechanism for transporting it along the width of the tape. The device is distinguished by a straight high frequency impulse generator taped into the electromagnetic erasing head. (Author)

Nalecz, Maciej.
A METHOD FOR MEASURING DISPLACEMENTS, MECHANICAL VIBRATIONS AND OTHER NON-ELECTRICAL QUANTITIES BY THE USE OF HALL'S PHENOMENON. [1963] [5p]
Order from OTS or SLA $1.10 63-20394

Trans. of Polish patent 44,034, cl. 42 c, 42, pub. 30 Dec 60.

DESCRIPTORS: *Meters, *Hall effect, Semiconductor devices, Magnetic fields, Vibration.

The invention involves a method for measuring displacements and electrical vibrations using Hall's phenomenon where the movement of a semiconductor plate in a magnetic field is caused directly by the measured object or a mechanical system. The zero value of Hall's potential is regulated by position of the plate or of the magnets. By situating magnets with similar poles toward each other, a high magnetic induction can be produced. Aging of the permanent magnets can be compensated by regulating the current. (Author)

Oslon, A. B.
THE CALCULATION OF BURIED EARTH ELECTRODES FOR TRANSMISSION LINE SUPPORTS. [1963] [8p] 5refs C.E. Trans. 2590.
Order from OTS or SLA $1.10 63-23959

Trans. of Elektrichestvo (USSR) 1961, no. 12, p. 59-63.

DESCRIPTORS: *Transmission lines, Electrodes, Earth, Mathematical analysis, *Resistance (Electrical), Soils,

A procedure is described for calculating earthing plates laid in trenches dug under the foundation or grillage of transmission line supports. A formula is derived for the total resistance of the earth electrode based on the assumption that the earthing device is located in homogeneous soil.

Otkhmezuri, G. L.
ON FEATURE CHARACTERISTICS AND THE SIXTH FEEDBACK LOOP. 9 Oct 63, 16p 2refs JPRS: 21375.
Order from OTS $0.50 63-31902

Trans. of Avtomatyka (USSR) 1963 [v. 8] no. 2, p. 41-52.

DESCRIPTORS: *Control theory, Automatic, Control systems, *Feedback, Circuits, Measure theory, *Adaptive control systems, Learning, Probability.

Introduced is an indicator of the usefulness of independent signs, taking into account the conditional probability of the sign in the presence of an image. The properties of the cognitive system Alpha with the sixth positive feedback are considered. It is shown that the presence of neutral signs deteriorates the system. The dependence of the number of diagonal signs on the reliability of cognition is derived. (Author)

Perepelyatnik, P. A.
SOME OPERATING CONDITIONS OF A SINGLE-STAGE SELF-OSCILLATOR WITH DELAY (O Nekotorykh Rezhimakh Raboty Odnolampovogo Avtogeneratora s Zapazdyvaniem). Report on AID Work Assignment no. 43. 14 June 63 [9]p. 3 refs. AID Rept. T-63-83; NASA-N63-19089.
Order from OTS or SLA $1.10 63-23611

Trans. of #Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1962, v. 5, no. 6, p. 1187-1191.

DESCRIPTORS: *Oscillators, Oscillation, Oscillographs, Delay circuits, Frequency modulation, Pulse modulation, Design, Operation,

The operating conditions of the self-modulated oscillations of a single-stage oscillator with delay were studied. The presence of sinusoidal and rectangular self-modulation, predicted by theory, was confirmed. It was demonstrated that besides asynchronous relationships between self-modulation frequencies and the carrier frequency, synchronous relationships also are possible. The latter instance is illustrated by oscillograms. The operating conditions of double self-modulation caused by the joint action of the delay line and of inertial nonlinearity, as well as those of video pulse generation, were investigated. (Author)

Périnet, G. and Chalhoub, C.
LINE REGULATION. [1963] 13p. (1 fig. omitted) 2 refs.
Order from SLA $1.60 63-18877

Trans. of Câbles et Transmission (France) 1962, v. 16, no. 3, p. 200-205.

DESCRIPTORS: *Coaxial cables, *Transmission lines, Attenuation, Temperature, Amplifiers, Gain, Automatic gain control, Design.

Line regulation, intended to compensate attenuation variations of the cable as a function of temperature, is obtained in the 12.5 Mc transmission system by varying gain of the amplifiers by means of two correcting signals. So-called main correction is derived from a resistance measurement effected at each amplification station on an auxiliary pair of the cable containing the coaxial pairs, whereas so-called supplementary correction, while being applied to all of the amplifiers of a main amplification section, is obtained from a pilot signal measurement at 4,287 kc, effected only at the end of that section. The article indicates how both these corrections are obtained and how they serve to modify in the proper direction the attenuation curve of a bridged T-network, with antimetric cut-all, set up between the preamplifier and output amplifier of the line amplifier. (Author)

Ratnikov, L. A.
THE DANCING OF CONDUCTORS ON A 110 kV TRANSMISSION. [1963] [3p] C.E. Trans. 2597.
Order from OTS or SLA $1.10 63-23952

Trans. of Elekt[richeskie] Stantsii (USSR) 1961, v. 32, no. 8, p. 86.

DESCRIPTORS: *Transmission lines, Vibration, Wind, Electric discharges.

A description is given of asynchronous vertical vibration of wires of a transmission line. The vibration was caused by the wind blowing at an angle of about 60° to the line at a velocity of 14-18 m/sec. Seven short-circuits resulted in a period of nine hours.

Rexford, Harry Eugene.
SEALING OF THE EDGES OF CAPACITORS. [1963] 6p
Order from OTS or SLA $1.10 63-20372

Trans. of Belgian patent 588,493, 1960, by Corning Glass Works (priority claimed: U. S. pat. appl. 798,644, 11 Mar 59).

DESCRIPTORS: *Capacitors, Glass seals, Glass, Sheets, Metal plates, Electric arcs, Electrodes.

The invention relates to a process for vitrifying the edge of a condenser made with a stacking of alternate layers of glass sheets and thin metal sheets bound to each other an in which the edges of the metallic sheets are very near the stacking edge, which comprises passing said condenser along a line near said edge between a pair of electrodes producing an arc depending

upon the charge therebetween, feeding said electrodes from an oscillatory circuit source to produce a horseshoe arc above said edge, using the charge introduced through the presence of the condenser to induce the periodical extinction and restriking of the arc between the said electrodes and vitrifying thereby progressively the surface of the edge of the condenser, when passing between the electrodes. (Author)

Schulze, R.
MAGNESIUM FOR CURRENT BUS BARS. [1963] 6p.
Order from SLA $1.10 63-18304

Trans. of Elektrotechnischer Anzeiger (Germany) 1939, v. 56, p. 557-559.

DESCRIPTORS: *Electric connectors, Magnesium, Electric currents, Joints, Electrical equipment,

Seryakov, N. I.
AUTOMATIC OPERATION OF ELECTRIC INSTALLATIONS OF CABLE MAINLINE BASE REPEATER POINTS. 17 Feb 60 [8]p. [US]ASIA SC-104d/59.
Order from OTS or SLA $1.10 62-32788

Trans. of #Vestnik Svyazi (USSR) 1959 [v. 19] no. 9[234] p. 7-9.

DESCRIPTORS: *Cables, Fastenings, Crimping tools, Splicing tools, Installation, Automatic, *Electric cables, Storage cells, *Electric power production.

This article contains plans and a description of the automatic power systems for base repeater points for mainline coaxial and balanced cable. (Author)

Solodov, A. V.
LINEAR AUTOMATIC CONTROL SYSTEMS WITH VARIABLE PARAMETERS. 1963, 340p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Lineinye Sistemy Avtomaticheskogo Upravlenie s Peremennymi Parametrami, Moscow, 1962, 324p].

DESCRIPTORS: *Control systems, Linear systems, Functions, Input-output devices, Transformations, Automatic, *Automation.

Tischer, F. J.
WAVEGUIDE OR LINE FOR ELECTROMAGNETIC WAVES, tr. by E. F. 20 Sep 63, 4p
Order from OTS or SLA $1.10 63-24127

Trans. of Swedish patent 154,491, cl. 21g 13/23, appl. 26 Aug 52, granted 15 Sep 55, pub. 29 Nov 55.

DESCRIPTORS: *Waveguides, *Electromagnetic waves, Deflection, Electronic equipment, Design, Transmission lines,

The invention relates to a waveguide or line for electromagnetic waves in the form of a closed ring whose electric length corresponds approximately to the wavelength used or to a multiple thereof. The waveguide or line according to the invention is characterized in that two input elements, for example, two capacitive antennas or two inductive wire loops are arranged at one-quarter wavelength distance from each other along the waveguide or line, said input elements being connected to a common supply line via branch lines whose electrical lengths differ by one quarter of the wavelength. (Author)

Vil'komirskii, I. E., Val'dman, G. F., and Novak, A. G.
CONSTRUCTION OF LABORATORY CELL FOR DETERMINING EFFECT OF ELECTRODE SPACING UPON CURRENT YIELD. [1963] 6p (figs omitted)
Order from K-H $6.00 K-H 3737 b

Trans. of Zavodskaya Laboratoriya (USSR) 1948, v. 14, no. 4, p. 503-504.

DESCRIPTORS: Laboratory equipment, Construction, Electrodes, Electric currents, *Electrolytic cells.

Weber, Anton and Herrmann, Günther.
HEAVY-LOAD ANODE FOR ELECTRON DISCHARGE VESSELS, PARTICULARLY THOSE WITHOUT ARTIFICIAL COOLING, tr. by F. H. B. 25 Jul 63, 3p
Order from OTS or SLA $1.10 63-23575

Trans. of German patent 896,229, addition to patent 718,479, cl. 21g. gr. 13/01, by Telefunken Gesellschaft für Drahtlose Telegraphie m. b. H. pat. from 12 Oct 40, appl. by Reichspatentamt, 18 Mar 43 and by Deutsche Patentamt 19 Feb 53, granted 1 Oct 53, pub. 9 Nov 53.

DESCRIPTORS: *Anodes (Electron tube), Anodes, *Iron, Sheets, *Aluminum coatings, Plating, Nickel, Molybdenum, Coatings, Annealing, Thermal radiation.

The anode consists of a strip of sheet iron coated, preferably plated, on one side with aluminum and coated on the other side with a metal that remains bright after heat treatment, particularly with nickel or molybdenum. The anode is subjected to an annealing treatment at a temperature ranging between 500 and 1000°C. This arrangement allows the direction of heat radiation to be controlled.

Wolf, Gerhard.
CIRCUIT FOR THE GENERATION OF A NEGATIVE CAPACITANCE AND FOR THE DOUBLE UTILIZATION OF AN AMPLIFIER TUBE, tr. by P. C. C. 16 Sep 63, 16p (figs omitted) 2refs
Order from OTS or SLA $1.60 63-24122

Trans. of German "Auslegeschrift" (DAS) 1,069,689, cl. 21a^2, 18/04, internat. cl. H 03 f, filed 13 May 57, appl. announced and pat. pub. 26 Nov 59.

DESCRIPTORS: *Circuits, *Capacitance, Amplifiers, Broadband, Design, *Push-pull amplifiers.

The invention relates to a circuit for the generation of a negative capacitance in broadband amplifier stages in order to compensate for undesired capacitances and increase the bandwidth. Furthermore, this circuit arrangement also provides for the double utilization of an amplifier tube, whereby additional energy is recovered from the circuit. This energy is produced independently of the output power in a separate circuit. In addition to compensation for the effect of undesirable capacitances, the circuit of the invention therefore also provides for the doubling of the maximum reactive power in the circuit of the preceding tube. (Author)

Zaitsev, N. S. and Khlebnikov, N. S.
SOME TECHNOLOGICAL PROBLEMS RELATING TO OXYGEN-SILVER-CESIUM PHOTOELECTRIC CATHODES. [1953] [28p] 9refs AERDL T-1689.
Order from OTS or SLA $2.60 63-24016

Trans. of Zhurnal Tekhnicheskoi Fiziki (USSR) 1938, v. 8, no. 11, p. 1023-1033.

DESCRIPTORS: *Cathodes, Oxygen, Silver, Cesium, *Phototubes, Manufacturing methods, Films, Tests, Cathodes (Electron tubes).

Zhulidov, N. A. and Efremov, F. I.
A NEW NICKEL-ZINC ACCUMULATOR (Novyi Nikel'-Tsinkovyi Akkumulyator). [1963] [6p] (foreign text included) [DSIR] NLL M. 5375.
Order from OTS or SLA $1.10 63-23924

Trans. of Vest[nik] Elektroprom[yshlennosti] (USSR) 1963, v. 34, no. 2, p. 74-75.
Another trans. is available from TTIS $6.00 as TTIS NS-71, May 63, 750words.

DESCRIPTORS: *Batteries and components, Zinc alloys, Nickel alloys.

Zolotarev, T. L. and Shteingauz, E. O.
HYDROELECTRIC POWER PLANTS AND THE MAIN TRENDS IN THEIR DEVELOPMENT (Gidroelektrostantsii i Osnovnye Napravleniya Ikh Razvitiya). 1963, 9p PL-480 Int.
Order from OTS $0.50 63-11156

Trans. of mono. Energetika i Elektrifikatsiya SSSR v Semiletke; po Materialam XXI s"ezda KPSS (Power Engineering and Electrification of the U. S. S. R. in the Seven-Year Plan; from the materials of the Congress of the Communist Party of the Soviet Union (no. 21)) Moscow, 1960, chap. 14, p. 145-154.

DESCRIPTORS: *Hydroelectric power systems, Operation, *Power plants (Establishments), Construction, Electric power production, Economics

Topics include: the water-power potential of the U. S. S. R.; development of water-power engineering during the last 40 years; operational and economic characteristics of hydroelectric plants; and the scope of hydroelectric power construction for 1959-1965.

Mechanical Engineering

Aizenshtat, I. I.
DYNAMIC PROPERTIES OF THE FEED CONTROL SYSTEM OF ONCE-THROUGH BOILERS WITH RESPECT TO THE "HEAT-WATER" CYCLE. [1963] [12p] 5refs C. E. Trans. 2610.
Order from OTS or SLA $1.60 63-24078

Trans. of Energomashinostroenie (USSR) 1961, v. 7, no. 11, p. 5-9.

DESCRIPTORS: *Boilers, *Feed water, Control systems, Pressure, Steam, Damping, Dynamics.

Factors are considered which determine the stability of the feed control system of a once-through boiler with respect to the "heat-water" ratio. A method of increasing the damping of the system is developed based on introducing an additional impulse into the feed regulator to denote the temperature of the medium at one or more points in the steam delivery line preceding the first desuperheater. (Author)

Fuks, L. A.
TYPE AK-10 TURBOGENERATOR UNDER STEAM AND STEAMLESS CONDITIONS. [1963] [5p] C. E. Trans. 2947.
Order from OTS or SLA $1.10 63-23967

Trans. of Elekt[richeskie] Stantsii (USSR) 1962 [v. 33] no. 7, p. 84-85.

DESCRIPTORS: *Turbines, *Generators, Steam, Electric power production, Feasibility studies.

Studies were conducted on a type AK-10 turbogenerator to determine the feasibility of adapting it for steamless conditions, without any important changes in the turbine design. Observations were recorded on changeover of the turbogenerator from steamless to steam conditions of operation. Operation of the AK-10 turbogenerator for over three years on the mixed operating routine proved it to be perfectly reliable.

Ginzburg, E. S.
AN INVESTIGATION INTO THE STRUCTURE AND PROPERTIES OF HIGH-PRESSURE STEAM TUBES AFTER PROLONGED OPERATION IN POWER PLANTS 23 Feb 59 [13p] 2refs TIL Trans. no. 1476; BISI Trans. no. 1199; [DSIR] NLL M. 4565.
Order from OTS or SLA $1.60 62-24210

Trans. of mono. The Strength of Metals, Moscow, 1956, p. 58-66.

DESCRIPTORS: *Steam power plants, *Steam pipes, Microstructure, Mechanical properties, Creep, Steel, Stresses.

The article presents results of investigations into the microstructure, mechanical properties, creep resistance and long-time strength of four high-pressure steam power plant tubes after 38,000-53,000 hours' operation at an average working temperature of 490°C and a pressure of 100 technical atmospheres. (Author)

Gol'denfarb, I. N. and Tarelkin, M. F.
SOME FEATURES OF THE NEW TPP-110 HIGH-CAPACITY BOILER. [1963] [3p] 2refs
C. E. Trans. 2848.
Order from OTS or SLA $1.10 63-24087

Trans. of Energomashinostroenie (USSR) 1962, v. 8, no. 7, p. 39.

DESCRIPTORS: *Boilers, Design, *Steam turbines, Power equipment.

Holz, Carl.
DEVICE FOR PREVENTION OR REMOVAL OF SWEAT FROM PANES BY MEANS OF A STREAM OF AIR WHICH EXISTS FROM A SLIT-SHAPED NOZZLE. [1963] 4p (figs omitted)
Order from OTS or SLA $1.10 63-20646

Trans. in manuscript of German patent 265 210 [1912].

DESCRIPTORS: *Nozzles, Air, Gas flow, Evaporation, Condensation, Glass, Surfaces.

Kostrikin, Yu. M., Kalinina, N. M., and Dzysyuk, A. A.
DETERMINING THE IRON CONTENT IN THE WATER OF A STEAM POWER PLANT INSTALLATION. [1963] [11p] 8 refs C. E. Trans. 2838.
Order from OTS or SLA $1.60 63-23968

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 7, p. 37-42.

DESCRIPTORS: *Steam power plants, Iron, Feed water, *Colorimetric analysis, Thio radicals, Salicylates,

An investigation was made of the causes of discrepancies when determining iron by the sulfosalicylate colorimetric method. The effect of initial acidity, added ammonia, excess sulfosalicylic acid, holding time, temperature and water impurities were investigated. Also established were the degree of leaching of the iron from the material of a container, the rate of solution of iron oxides, and the extent of iron losses on evaporating the acidified solutions or on calcining the residue after evaporation. This method for determining iron produces good results when the following conditions for the conduct of the analysis are observed: (a) The sample should be acidified to an acidity of 0.2-0.3 n with hydrochloric acid. (b) The acidified sample should be evaporated to a residual volume of 2-3 ml. (c) If organic substances in the sample inhibit determination of the iron by color or by capacity to form complexes with iron, the sample should be evaporated to dryness and the organic substances destroyed by calcining. The calcined residue should be heat-treated with hydrochloric acid. (d) Not less than 1 ml and not more than 2 ml of a 30% solution of sulfosalicylic acid should be introduced into the sample.

Levchenko, B. L. and Shvets, V. N.
STARTING UP A 50MW UNIT BY STEAM WITH SLIDING PARAMETERS. [1963] [14p] 3refs
C. E. Trans. 3044.
Order from OTS or SLA $1.60 63-24098

Trans. of Teploenergetika (USSR) 1963, v. 10, no. 1, p. 2-8.

DESCRIPTORS: *Boilers, *Turbines, Starting, Steam.

Results are given of an experimental investigation into the conditions of starting up a 50MW unit by steam with sliding parameters. Recommendations are proposed on the start-up conditions as well as on the unit equipment for starting up with sliding parameters. (Author)

Panasenko, M. D. and Koslov, Yu. V.
INVESTIGATION OF SEPARATING EQUIPMENT FOR HIGH CAPACITY DRUM BOILERS. [1963] [6p] (figs omitted) 4refs
Order from OTS or SLA $1.10 63-20391

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 8 [p. 69-72].

DESCRIPTORS: *Boilers, *Steam, Separation, Moisture.

Results of investigation are given for a corrugated plate-type separator with its entering rim placed at a small vertical angle (14°). The investigation was performed at pressures of 17, 40, 100 and 150 ata, and at various loads and initial moisture contents. (Author)

Tsukerman, R. V. and Nazarenko, S. S.
COST INDICES IN THE MANUFACTURE OF LARGE STEAM BOILERS. [1963] [10p] 2refs C.E. Trans. 2734.
Order from OTS or SLA $1.10 63-23974

Trans. of Energomashinostroenie (USSR) 1961 [v. 7] no. 10, p. 33-36.

DESCRIPTORS: *Boilers, Steam, Costs,

Two statistical methods are described for calculating the manufacturing costs of projected boilers, One method is based on the functional relation between cost price and the materials component. This method requires a drawing or technical project which permits an approximate calculation of the material required from which the theoretical cost price can be calculated. The second method is based on determining the relation between manufacturing costs and the power and steam parameters of boilers. This method requires only indications of the usual power parameters. The cost of the boilers is determined by introducing correction factors in the form of coefficinets, taking into account the effect of power and other parameters on the components of the manufacturing costs for a standard boiler, which, for this purpose is considered to be of a power of 200 gcal/h at 100 ata and at 540°C. A comparison of manufacturing costs calculated by these methods and of the actual costs shows the calculations are accurate within 10%.

A NEW SOVIET SCIENTIFIC SATELLITE (TASS REPORTS): EXTRACTS, tr. by J. W. T. Palmer.
26 Mar 62 [4p] RAE Library Press Trans. no. 15; [DSIR] NLL M. 3730.
Order from OTS or SLA $1.10 63-19823

Trans. from Pravda [Moscow] (USSR) 1962, 17-18 Apr.

DESCRIPTORS: *Scientific satellites, *Satellites (Artificial), Orbital trajectories.

Reports are given concerning a scientific satellite launched 16 March 1962.

THE SOVIET SATELLITE "COSMOS 2" (TASS REPORTS): EXTRACTS, tr. by J. W. T. Palmer.
13 Apr 62 [3p] RAE Library Trans. no. 16; [DSIR] NLL M. 3765.
Order from OTS or SLA $1.10 63-19792

Trans. from Pravda [Moscow] (USSR) 1962, 7-8 Apr.

DESCRIPTORS: *Satellites (Artificial), Orbital trajectories, Telemetering data.

THE SOVIET SATELLITE "COSMOS 3" (TASS REPORT): EXTRACTS, tr. by J. W. T. Palmer.
May 62 [2p] RAE Library Press Trans. no. 17; [DSIR] NLL M. 3784.
Order from OTS or SLA $1.10 63-19774

Trans. from Pravda [Moscow] (USSR) 1962, 25 Apr.

DESCRIPTORS: *Satellites (Artificial), Orbital trajectories, Telemetering data.

THE SOVIET SATELLITE "COSMOS 4" (TASS REPORTS): EXTRACTS, tr. by J. W. T. Palmer.
May 62 [3p] RAE Library Press Trans. no. 18; [DSIR] NLL M. 3783.
Order from OTS or SLA $1.10 63-19775

Trans. from Pravda [Moscow] (USSR) 1962, 27 and 30 Apr.

DESCRIPTORS: *Satellites (Artificial), Orbital trajectories, Telemetering data.

Avanesov, D. S.
MANUAL OF PHYSICAL AND CHEMICAL TESTING OF EXPLOSIVES, tr. by H. G. Condor. Sep 62 [175p] AWRE Trans 30.
Order from OTS or SLA $12.50 63-24066

Trans. of mono. [Praktikum po Fiziko-Khimicheskim Ispytaniyam Vzryvchatykh Vestchestv] Moscow, 1959.

DESCRIPTORS: *Explosive materials, *Explosives initiators, Propellants, Detonators, Handling, Storage, Detonations, Thermochemistry, Stability, Explosion effects, Blast, Tests.

The first part of the book, which deals with explosives and methods of their handling and pressing and the firing of explosive charges, and also includes the first three exercises, contains material used in instruction the technique of accident prevention. In the second part twenty-two exercises are set forth, covering the entire course conforming to the current programmes of laboratory work in connection with the "Theory of Explosives". A brief outline relating to the course of the theory of the subject is included in each chapter. The book is a manual intended for Higher Technical Schools. (Soviet editor's note)

Gorst, A. G.
POWDERS AND EXPLOSIVE SUBSTANCES, PT. 1, CHAP. 7: EFFECT OF AN EXPLOSION ON ITS SURROUNDINGS. Dec 61 [10p] TIL/T.5207 (b); [DSIR] NLL M.3533.
Order from OTS or SLA $1.10 62-25354

Trans. of mono. Porokha i Vzryvchatye Veshchestva, 2d rev ed., Moscow, 1957, p. 79-89.

DESCRIPTORS: *Explosive materials, Powders, Explosions, *Explosion effects, Damage, Shock waves,

Topics include: dispersion of explosion products; brisance and fugacity effect of an explosion; active portion of the charge and directional effect of the explosion; hollow charge effect of an explosion; and effect of explosion at a distance and safe distances. (See also 62-25353)

Gorst, A. G.
POWDERS AND EXPLOSIVE SUBSTANCES, PT. 1: SELECTED PARTS. Dec 61 [22p] TIL/T.5207 (a); [DSIR] NLL M.3532.
Order from OTS or SLA $2.60 62-25353

Trans. of mono. Porokha i Vzryvchatye Veshchestva, 2d rev ed., Moscow, 1957, foreword, contents, pt. 1 chap. 5, p. 58-60 and chap. 6, p. 66-79.

DESCRIPTORS: *Explosive materials, Powders, Explosive gases, Autoignition, Ignition lag, Flame propagation, Detonations, Shock waves, Detonation waves,

Contents:
Foreword to 2d ed
Table of contents of book
Combustion of gaseous and condensed explosives: origin and propagation of combustion in gaseous substances
Origin and propagation of detonation.

Gorst, A. G.
POWDERS AND EXPLOSIVE SUBSTANCES, PT. 3: INIATORS. Dec 61 [5p] TIL/T.5207 (c); [DSIR] NLL M.3534.
Order from OTS or SLA $1.10 62-25355

Trans. of mono. Porokha i Vzryvchatye Veshchestva, 2d rev ed., Moscow, 1957, pt. 3, p. 107-110.

DESCRIPTORS: *Explosive materials, Powders, *Explosion initiators, Mercury compounds, Fulminates, Lead compounds, Azides, Nitro radicals, Resorcinols, Tetrazenes.

Topics include: definitions and general characteristics; mercury fulminate; lead azide; lead trinitroresorcinate; and tetrazene. (See also 62-25354)

Gorst, A. G.
POWDERS AND EXPLOSIVE SUBSTANCES, PT. 4: MEANS OF IGNITION AND INITIATION. Dec 61 [19p] TIL/T.5207 (d); [DSIR] NLL M.3535.
Order from OTS or SLA $1.60 62-25356

Trans. of mono. Porokha i Vzryvchatye Veshchestva, 2d rev ed., Moscow, 1957, pt. 4, p. 111-130.

DESCRIPTORS: *Explosive materials, Powders, *Ignition, *Detonators, *Electric primers, *Fuzes (Ordnance).

Topics include: classification of means of ignition and initiation; means of ignition (ignitory detonators, electric primers, safety fuses); and, means of initiation (disruptive detonators, electric detonators). (See also 62-25355)

Lidov, M. L.
EVOLUTION OF THE ORBITS OF ARTIFICIAL SATELLITES OF PLANETS AS AFFECTED BY GRAVITATIONAL PERTURBATION FROM EXTERNAL BODIES, tr. by Jean Findlay. Aug 63 [18p] 10refs
Available from AIAA in Its Journal, v. 1, no. 8, $5.00

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 8, p. 5-45.
Another trans. is available from OTS or SLA $6.60 as 63-18706 [1953] [61p].

DESCRIPTORS: *Satellites (Artificial), *Orbital trajectories, *Celestial mechanics, Gravity, Perturbation theory, *Equations of motion, Differential equations, Mathematical analysis.

Lur'e, A. I.
THE MOMENT OF THE GRAVITY FORCES, ACTING ON THE SATELLITE. [1963] [5p] 3refs
Order from OTS or SLA $1.10 63-18815

Trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1963 [v. 27] no. 2, p. 377-378.

DESCRIPTORS: Mechanics, *Satellites (Artificial), *Gravity, *Moments, Inertia, Earth, Vector analysis, Geophysics.

The computation of the moment of forces acting on the satellite in the field of gravity of a geoid is presented. The moments of the forces relative to the major axes of inertia for the satellite are computed by vector analysis.

Serebryakov, M. E.
INTERIOR BALLISTICS, 2D ED. [1963] [607p] 48refs
Order from OTS or SLA $28.50 63-20306

An abridged trans. of mono. [Vnutrennyaya Ballistika, 2d ed.] Moscow, 1949, 670p.

DESCRIPTORS: *Interior ballistics, *Explosive materials, *Thermodynamics, Mathematical analysis, Guns, Design.

Topics include: powder as the source of energy; general pyrostatics; ballistic analysis of powders based on the physical law of burning; physical principles of pyrodynamics; the outflow of gases from the gun; analytical methods of solution of the direct problem of interior ballistics; numerical methods; empirical methods; tabular methods of solution for the problems of interior ballistics; ballistic design of guns; solution for composite powder charges; and, guns with tapered bores (conic guns).

Sanitation and Safety Engineering

AUTOMATIC DEVICE FOR DELAYED OPENING OF PARACHUTES, tr. by P. C. C. 20 Sep 63, 19p (figs omitted)
Order from OTS or SLA $1.60 63-24118

Trans. of French patent 1,178,079, gr. 6, cl. 4, internat. cl. B 64d, by Compagnie Crouzet and Sud-Aviation (Société Nationale de Constructions Aéronautiques) filed 1 Jul 57, granted 8 Dec 58, pub. 4 May 59.

DESCRIPTORS: *Parachutes, Safety devices.

The invention relates in particular to an automatic device for the delayed opening of parachutes, in which a parachute pack is opened by release of a tensioned spring controlled both by a timing device and by a barometric device, characterized in that the spring is held under tension by a ball lock, the balls thereof being in place by one of the arms of a cocked level loaded by a return spring, the other arm of said level comprising two fingers, one of said fingers cooperating with the timing device, and the other, with a barometric device. (Author)

Abramov, B. S.
UNDERGROUND WATERS ARE OUR HIDDEN SOURCES OF LIFE. 10 Sep 63, 15p. JPRS: 20994.
Order from OTS $0.50 63-31715

Trans. of Priroda (USSR) 1963 [v. 52] no. 7, p. 25-31.

DESCRIPTORS: *Water supplies, *Well drilling, Irrigation systems, Centrifugal pumps.

Water sources are discussed in general and, in particular, underground water supplies of Kazakhstan, the central part of Uzbekistan's Ferganskaya Valley, Turkmeniya, Moldavia, Latvia, Estonia, Georgia, Armenia, Azerbaijan, and Western Siberia. Various methods and apparatuses for drawing water out of wells

are presented, including conveyor belts, centrifugal pumps, airlifts, and electromagnetic vibration water-raisers. Utilization of underground water for irrigation is noted.

Boiko, V. A.
STUDY OF HEAT TRANSFER UNDER MINING CONDITIONS BY THE ELECTRICAL ANALOGUE METHOD (Issledovanie Teploperedach v Shakhtnykh Usloviyakh Metodem Elektricheskikh Analogii) tr. by F. M. Janus. Mar 62 [5p] S. M. R. E. Trans. no. 4671 [DSIR] NLL M. 3849.
Order from OTS or SLA $1.10 63-19900

Trans. of Ugol' Ukrainy (USSR) 1961, v. 5, no. 12, p. 26-27.

DESCRIPTORS: *Safety, *Mining engineering, *Heat transfer, Ventilation, Circuits, Oscillagraphs, Test methods, Rock (Geology), *Analog systems.

An electrical analogue method was developed which enables mining and safety engineers to study the problems of heating of the air flowing in roadways under natural conditions, heating of the rocks during a mine fire and the subsequent heating of the mine air by the heat given up by the strata with the progressive displacement of the fire focus along the roadway.

Mitarnovskii, V. M.
SMOKING CIGARETTES FOR MOSQUITO CONTROL (Kuritel'ne Papirosy dlya Bor'by s Kormarami). 29 Apr 63, 3p. NIH no. 4-36-63.
Order from OTS or SLA $1.10 63-19594

Trans. of Med[itsinskaya] Parazitol[ogiya] i Parazit[arnye] Bolezni (USSR) 1944, v. 13, no. 5, p. 89-90.

DESCRIPTORS: Cigarettes, *Smokes, *Tobacco, *Insect control, *Culicidae, Public health.

Smoking cigarettes of the type proposed here have a stupefying effect on mosquitoes. Introduction into the composition of the cigarettes of the waste products of tobacco and sawdust permitted production of the content of the substances more difficult to obtain (pyrethrum and saltpeter) while maintaining a good stupefying effect on mosquitoes. The method proposed for making the cigarettes is accessible and popular. Considering the important epidemiological significance of the destruction of winged mosquitoes in field (camp) conditions, it is necessary to organize extensive use of smoking cigarettes (candles) in the military departments. (Author)

Schmitt, Max.
PROCEDURE FOR THE ELIMINATION OF LEAD CONTAINED IN WATER. [1963] 3p
Order from OTS or SLA $1.10 63-20453

Trans. of French patent 980,709, gr. 14, cl. 6, filed 10 Feb 43, granted 3 Jan 51, pub. 17 May 51.

DESCRIPTORS: *Water, Purification, Lead, Separation, Filters (Fluid).

The invention claims a method for the elimination of lead contained in water consisting of putting this water in contact with an alkaline earth carbonate after having eliminated the carbonic acid which it contains; the filtration of the water through a layer of alkaline earth carbonate in grains or pieces which first eliminates the carbonic acid and then fixes the lead; and, the elimination of carbonic acid from crude water in contact with alkaline earth carbonates by treatment with an alkaline earth oxide. (Author)

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Bretschneider, Edmund.
POURING DEVICE, tr. by F. H. B. 24 Sep 63, 4p (figs omitted)
Order from OTS or SLA $1.10 63-24120

Trans. of German patent 394,520, cl. 64/c, gr. 33, pat. from 6 May 23, pub. 24 Apr 24.

DESCRIPTORS: *Nozzles, Liquids, *Containers, Design.

Food

RAPID-FREEZING METHODS IN THE SOVIET FISHING INDUSTRY. 26 Aug 63, 7p. JPRS: 20813.
Order from OTS $0.50 63-31627

Trans. of Rybnoe Khozyaistvo (USSR) 1963, v. 39, no. 4, p. 2-6.

DESCRIPTORS: *Freezing, *Fishes, Frozen foods, Preservation, Industrial production, Industrial equipment,

The needs of the fishing industry for more, and improved rapid-freezing equipment and facilities are discussed. The use, manufacture, and distribution of freezing equipment from ship refrigeration at time of the catch to railroad refrigeration during transportation to marketing centers are outlined. Failures in proper utilization of new equipment at fish processing plants are cited. Plans are presented for coordinating equipment production with production of 50 million centners of fish during 1965. The number, types and uses of rapid-freezing equipment needed to be in operation to preserve, process, and distribute this catch are described.

Almashi, K. K.
PENTOSES AND PENTOSANS OF GRAPES AND WINE (Pentozy i Pentozany Vinograda i Vina) tr. by B. Ribush. [1963] [9]p. (foreign text included) 9refs [CSIRO] Trans. no. 6333.
Order from OTS or SLA $1.10 63-23743

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 6, p. 8-11.

DESCRIPTORS: *Vitaceae, *Wines, *Pentoses, Carbohydrates, Chemical analysis,

Various grapes and wines were analyzed by paper chromatography to determine their content of pentoses and pentosans. Investigation of two Tokay-type wines, made from Furmint and from Bakator, revealed a content of arabinose, xylose, rhamnose, xylan, and araban The must and wine of typical Tokay grapes contained approximately twice as much pentoses as that made of non-Tokay variety. In all the samples, except the pure juice of dried grapes, the pentosan content was approximately twice as high as the pentose content. In the pure juice of dried grapes, the pentose content was greater than the pentosan content.

Politova-Sovzenko, T. K.
DYNAMICS OF NITROUS SUBSTANCES DURING TECHNOLOGICAL TREATMENT (Dinamika Azotistykh Veshchestv pri Tekhnologicheskikh Operatsiyakh) tr. by V. A. Soloduhin. [1963] [8p] (foreign text included) [CSIRO] Trans. no. 6309.
Order from OTS or SLA $1.10 63-23990

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 3, p. 19-21.

DESCRIPTORS: *Wines, *Beverages, Vitaceae, *Fermentation, Nitrogen compounds, Amino acids, Heat treatment, Yeasts, Apples.

The changing amounts of total nitrogen and amino-nitrogen in wines subjected to various types of treatment were reported. In champagne-making in bottles the amino-acid content and yeast autolysis fluctuated until 90 and 180 days after fermentation when the amino-acid content remained unchanged. Sherry-making was characterized by two repeating rhythms, each having a considerable decrease in the amino-acid content and then a period of equilibrium. Heating increased the amino-acid content due to the increased amount of free amino-acids following the hydrolysis of polypeptides and other compounds under the effect of wine acids and temperature. Nitrous substances were found by the Kjeldahl and Dumas methods to be in various proportions in different wine-making materials. At high temperatures synthesis of the nitrous substances increased. Changes in the nitrous substance content during fermentation depends also on the composition of the liquid.

Sadini, Vittorio.
FURTHER DEVELOPMENTS IN CHROMATOGRAPHIC RESEARCH ON THE COLORATION OF FOODSTUFFS [1963] [27p] 100refs
Order from SLA $2.60 63-20279

Trans. of Rassegna Chimica [per il Chimico e per l'Industria] (Italy) 1961, v. 13, no. 6, p. 13-18.

DESCRIPTORS: *Dyes, Wines, Fruit juices, Vegetables, *Chromatographic analysis.

A survey of papers published from 1958 through 1960.

Samvelyan, A. M. and Gasparyan, A. I.
HOW TO OBTAIN RED WINES OF RICH COLOUR (Poluchenie Krasnykh Vin s Intensivnoi Okraskoi) tr. by B. Ribush. [1963] [5p] (foreign text included) [CSIRO] Trans. no. 6328.
Order from OTS or SLA $1.10 63-23992

Trans. of Vinodelie i Vinogradarstvo SSSR, 1962 [v. 22] no. 6, p. 6-7.

DESCRIPTORS: *Wines, *Beverages, Vitaceae, Plant pigments, Colors, Fermentation, Hydrogen ion concentration.

Tests were made on fermentation of red semi-dry wine. A more intense color was achieved by increasing the acidity of the must during fermentation. At equal pH of the medium, citric acid was more effective than tartaric acid in extracting anthocyans.

Terek, Ljudevit.
DEPENDENCE OF THE PURITY OF SUGAR CRYSTALS ON THE PURITY OF SUGAR JUICES AND SIRUPS [Zavisnost Cistoce Kristala Saharoze od Cistoce Secerovine i Maticnog Sirupa-Kvocijent Prave Melase]. [1963] 5p. (figs. tables omitted).
Order from SLA $1.10 63-16373

Trans. of Tehnika (Yugoslavia) 1956 [v. 11] no. 7, p. 1069-1071 (PI97-PI99).

DESCRIPTORS: *Sucrose, Impurities, Crystals, Crystallization, Mathematical analysis,

Impure sucrose crystals are caused by impurities in the fillmass (sugars plus non-sugars) which are absorbed into the crystals during crystallization. A formula is devised to determine the amounts of occluded non-sugars integrated into the sucrose crystal.

Ueda, Ryuzo and Terajima, Takane.
CHANGES OF LACTIC ACID POLYMERS BY DILUTION. Rept. 12 [of] Studies of the Utilization of Fermented Lactic Acid. [1963] 7p 3refs
Order from SLA $1.10 63-18905

Trans. of Hakko Kogaku Zasshi (Japan) 1958, v. 36, p. 371-374.

DESCRIPTORS: *Condiments, Taste, *Lactic acid, *Polymers, Solutions, Hydrolysis, Chemical equilibrium.

Changes of lactic acid polymers when edible grade lactic acid (87.20%) was diluted to various concentrations with distilled water were examined. When left at room temperature, at 5% concentration the trimer existed for at least 30 days and even after 40 days still a fairly large amount of dimer existed, and equilibrium was reached 85 days later. At concentrations of from 5% to 40%, no great difference was seen in the time for attaining equilibrium. Hydrolysis of lactic acid polymers was accelerated by rise in temperature. At 5% concentration, for example, equilibrium was reached in 75 hours at 60°C and in 10 hours in a boiling water bath (Author)

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

USSR INDUSTRIAL DEVELOPMENT: SOVIET METALWORKING EQUIPMENT NO. 75. 16 Oct 63, 21p JPRS: 21456.
Order from OTS $0.75 63-31945

Consists of 29 selected articles and newsbriefs from 1963 issues of Russian newspapers and journals.

DESCRIPTORS: *Industrial production, *Industrial equipment, *Machine tools, Cutting tools, Lathes, Machines, Construction.

USSR INDUSTRIAL DEVELOPMENT: SOVIET PRECISION EQUIPMENT NO. 124. 11 Oct 63, 43p. JPRS: 21418.
Order from OTS $1.25 63-31923

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1963, no. 7, p. 42-48; 16 selected articles from 1963 issues of 11 Russian newspapers; and 2 articles from unidentified Russian publications.

DESCRIPTORS: *Industrial production, *Precision equipment, Education, Industrial training, *Computers, Communism, Personnel management, Engineering personnel, Conferences, Dyes, *Electronic equipment, Phototubes, Amplifiers, Hygrometers, Dentistry, Medical equipment, Surgical instruments, Ultrasonic radiation, High frequency, Employee relations.

Contents:
An educational combine completed at the Kiev "arsenal" plant imeni V. I. Lenin
700 persons per year taking computer training at Vil'nyus
Preparations for the report and elections meeting at the Erevan clock plant, by A. Akopyan
A day of rest illegally cancelled in order to fulfill the plan, by K. Grigor'eva
Engineer Bron'yus Zhalenas' contributions to the success of Vil'nyus computers, by S. Naumov
A summary report on the 19th All-Union Scientific Session devoted to Radio Day, by V. Siforov
An appeal for separation of responsibilities of the shop chief and the chief engineer, by K. Shabunevskii
Instruments for automation of processes in enterprises of the dairy industry, by A. Ya. Vainberg and L. P. Brusilovskii
A self-adjusting system of automatic dyeing of hides in nitro units, by A. V. Basharin and V. G. Kepperman
New instruments based on photoelectric cells for use in industry
Announcement of competition for the position of senior scientific associate in automatic control
Announcement of competition for positions at the Kolomna electronic machine building institute
Advertisement of radioelectronic parts for sale
A new electronic hygrometer developed at Kutaisi
Miscellaneous advertisements concerning equipment
Development of a small-scale ultrasonic cleaner announced
Production reforms at the computer-analytical machine plant
Cleanliness, good housekeeping, piped-in music: all contribute to productive efficiency, by V. Butusov
The need for ideological education in plant operations, by G. Peskov
Fist-fighting is a sign of low morals and unworthy of the Soviet man, by V. Lyashenko.

Anuchin, M. A., Antonenkov, O. D., Nosikov, S. M., Popkov, G. I., and Razumov, N. A.
ON SHEET METAL STAMPING BY EXPLOSION [AND] EXPERIENCE AND PROBLEMS IN THE FIELD OF AUTOMATION OF THE MACHINE-BUILDING INDUSTRY OF MOSCOW. USSR Industrial Development: Soviet Metalworking Equipment no. 74. 15 Oct 63, 18p 2refs JPRS: 21459.
Order from OTS $0.50 63-31943

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Mashinostroenie (USSR) 1963, no. 3, p. 194-199, 209-217.

DESCRIPTORS: *Industrial production, *Machine tool industry, *Metal plates, Sheets, *Explosive forming, Machine tools, Automation.

Bostdorp, Johannes.
SCREW DRIVER WITH SPRING-ACTUATED DOWEL PIN, tr. by L. A. N. 8 Jul 63, 4p (figs omitted) 2refs
Order from OTS or SLA $1.10 63-23580

Trans. of Netherlands patent 69,290, cl. 87a, gr. 19, appl. no. 137,587, filed 24 Dec 47, laid open to public inspection 15 Aug 51, granted 16 Dec 51, pub. 15 Jan 52.

DESCRIPTORS: *Screwdrivers, Pins (Mechanical), Springs, Design.

The invention relates to a screw driver, wherein a groove is provided in the blade in longitudinal direction, while in a recess, located in the extension of the groove, a spring-actuated dowel pin is attached, characterized in that the end of the dowel pin is bent over outwardly and beveled upwardly and projects from the screw driver blade only far enough such that the end of the blade and the end of the dowel pin can be pressed directly into the groove of a screw head when pressure is exerted in the direction of the screw on the screw driver placed in the appropriate position on the groove. (Author)

Drosihn, U.
METAL WEAR IN TUBE MILLS. [1963] 28p (figs omitted) 12refs
Order from SLA $2.60 63-20307

Trans. of Zement-Kalk-Gips (West Germany) 1961, v. 14, no. 8, p. 325-339.

DESCRIPTORS: Wear resistance, *Ball mills, Steel, Hardness, *Cements, Production, *Grinders.

Topics include: relation of mill wear to production costs; grinding process in the tube mill; wear of metals

used heretofore; tests of highly wear resistant ball charge; evaluation of mill liners; correct evaluation of mill metal loss; and hardness test.

Livshits, S. P.
ON THE USE OF ROTATING DIFFUSOR APPARATUSES IN CENTRIFUGAL COMPRESSOR MACHINES. 22 Aug 63 [15p] 5refs FTD-TT-63-809.
Order from OTS or SLA $1.60 63-24047

Unedited rough draft trans. of Teploenergetika (USSR) 1962 [v. 9] no. 3, p. 25-29.

DESCRIPTORS: *Centrifugal compressors, *Compressors, *Diffusers, Aerodynamic configurations, Aerodynamics, Bodies of revolution.

Results are presented of experimental research of compressor stages in which the angle of the setting of the input edges of the diffusor apparatus changes in accordance with the change in the direction of the flow in passing from one mode of operation to another. (Author)

Malova, A. N., ed.
THE USE OF LOOSE INSERTS IN CUTTING TOOLS. Jul 57 [7p] GRC/T.197; [BISI] Trans. 629; [DSIR] NLL M.4135.
Order from OTS or SLA $1.10 62-24142

Partial trans. (excerpts) of mono. Spravochnik Tekhnologa Mashinostroitelya (Handbook of Engineering Technology) Moscow, 1956, v. 2, p. 199-200, 209, 285, 288.

DESCRIPTORS: *Cutting tools, Industrial equipment, Machines.

Torlach, A.
THE BAFFLE MILL: A RECENT DEVELOPMENT IN THE FIELD OF DISINTEGRATING TECHNIQUES [1963] 11p. (figs. omitted) 8 refs.
Order from SLA $1.60 63-18456

Trans. of V[erein] D[eutscher] I[genieure]. Z[eitschrift] (West Germany) 1955, v. 97, no. 15/16, p. 493-496.

DESCRIPTORS: *Milling machines, Minerals, Rocks (Geology), Fracture (Mechanics), *Industrial equipment, Design, Operation.

The baffle mill consists of a mill casing of welded construction in which a rotor, fitted with beating arms beat at the periphery, picks up the charge material (ores, minerals or rocks) and throws it against spirally suspended baffle plates. Upon impact of the material against these steel bodies, as well as because of the impact of the individual rock pieces against each other, the material breaks and is disintegrated. The applications and advantages for using the baffle mill are presented for the following purposes: processing of wreckage debris, brick industry or industry of refractory stones, glass industry, limestone and cement industry, ore preparation, salt industry, coal preparation, mine filling, coking coal, street building, and foundary operation.

Engines and Propulsion Systems

Berg, H. H.
THE DVL EXHAUST GAS TESTER FOR INTERNAL COMBUSTION ENGINES (DVL-Abgasprufer für Verbrennungsmotoren). [1963] 4p
Order from SLA $1.10 63-20291

Trans. of MTZ; [Motortechnische Zeitschrift] (Germany) 1940, Jul, p. 227-229.

DESCRIPTORS: *Internal combustion engines, *Exhaust gases, Test equipment, Fuel consumption, Thermal conductivity, Carbon dioxide

Büchi, Alfred.
TURBINE ROTOR ELEMENT, IN PARTICULAR FOR GAS TURBINES (Elemento di Girante di Turbina, in Particolare per Turbine a Gas). [1963] [19p] (foreign test included).
Order from OTS or SLA $1.60 63-18827

Trans. of Italian patent 440,655, cl. Va, filed 13 Aug 47, granted 16 Oct 48 (priority: appl. no. 14,472, 13 Aug 46, Switzerland).

DESCRIPTORS: *Gas turbine rotors, *Rotor blades (Turbomachinery), Diffusers, Turbine parts, Design, Fluid mechanics.

The invention relates to a special conformation of turbine sections having a diffuser on the exhaust side, in particular for gas turbines. Such special conformation consists in that the baffle blading and walls of the turbine on the exhaust and intake sides of the rotor are so shaped and oriented that the fluid under pressure passes through the blading of the rotor in radio-axial direction at an angle to the centerline of the turbine, the following diffuser, at least in the vicinity of the rotor blading, having its inside and outside and outside walls diverging so that their axis of symmetry coincides with the centerline of the turbine. (Author)

Kropp, L. I.
INVESTIGATION OF LOCAL HEAT LOADS IN A HIGH PRESSURE PLATEN SUPERHEATER. [1963] [11p] 3refs C. E. Trans. 3030.
Order from OTS or SLA $1.60 63-24095

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 12, p. 31-37.

DESCRIPTORS: Metal plates, High pressure research, Gases, Temperature, Gas flow, *Boilers, Design.

The article describes the local heat load investigational results of the most loaded sectors of superheater platens of a high pressure boiler fired with pulverized anthracite. Certain recommendations are suggested in the design of superheaters in large-capacity-boiler units. (Author)

Terent'ev, I. K.
EFFECT OF THE DEGREE OF PARTIAL ADMISSION ON THE DEGREE OF REACTION IN A TURBINE STAGE. [1963] [7p] 5refs C. E. Trans. 3043.
Order from OTS or SLA $1.10 63-24096

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 3, p. 18-21.

DESCRIPTORS: Turbines, *Turbine parts, Turbine blades, *Nozzles, Fluid flow, Equations.

A formula is derived in this article for determining the degree of reaction of a simple stage as a function of the degree of partial admission. A comparison is presented of experimental theoretical data. (Author)

Vzorov, B. A.
THE INFLUENCE OF STEEL PISTON RINGS ON PISTON TEMPERATURE, tr. by A. J. Greening. [1962] [11p] 2refs MIRA Trans. no. 17/62; [DSIR] NLL M. 3740.
Order from OTS or SLA $1.60 63-24028

Trans. of Avtom[obil'naya] Prom[yshlennost'] (USSR) 1961 [v. 27] no. 4, p. 14-16.

DESCRIPTORS: Steel, *Piston rings, *Engine structures, Temperature, Internal combustion engines, Equations, Cast iron, Measurement.

A quantitative, theoretical evaluation of the influence of piston-ring material and design on piston temperature is made by utilizing equations from the theory of piston thermal stress. The influence of engine-operating conditions on the temperature of a standard piston, equipped in one case with cast-iron piston rings and in the other case with steel piston rings, is investigated. The results are presented in the form of tables and graphs.

Machine Parts and Mechanisms

Artyukh, V. S.
A COMPARISON OF PNEUMATIC AND HYDRAULIC BRAKING DEVICES FOR PILGER MILL FEED MECHANISMS. 19 Nov 58 [20p] TIL Trans. no. 1453; BISI Trans. no. 1088; [DSIR] NLL M. 4068.
Order from OTS or SLA $1.60 62-13200

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 338-351.

DESCRIPTORS: *Brakes, *Pneumatic brakes, *Hydraulic brakes, *Rolling mills, Industrial equipment, Design, Equations, Correlation techniques.

Formulas are presented that make a comparative evaluation of the factors involved in increasing the number of revolutions of the rolls and improving the output of 6-12" mills, both in the case of existing feed mechanisms with pneumatic braking, and also in the event of these being replaced with new feeds operating with hydraulic brakes. The comparative characteristics of the moving masses of feed mechanisms for 6-12" mills with air and water brakes are also presented.

Benz, Walter.
NECKED TENSION BOLT, STRAINS AND STRESSES, TORQUE WRENCH (Dehnschraube, Spannkraft, Drehmomentschlüssel). [1963] [18p] (foreign text included) 3 refs
Order from SLA $1.60 63-20281

Trans. of MTZ; Motortechnische Zeitschrift (West Germany) 1948, v. 9, no. 3, p. 33-36.

DESCRIPTORS: *Bolts, Design, Mechanical properties

Bubentsov, A. M. and Polukanin, P. N.
FRICTIONAL POWER LOSSES AND OIL COMSUMPTION IN THE THRUST BEARINGS OF TURBINES. [1963] [15p] 10refs C. E. Trans. 2699.
Order from OTS or SLA $1.60 63-24080

Trans. of Energomashinostroenie (USSR) 1961, v. 7, no. 11, p. 34-38.

DESCRIPTORS: Turbines, *Thrust bearings, Friction, Power, Lubrication, Lubricants.

Factors affecting frictional power losses and oil consumption in two-sided thrust bearings of turbines are considered. The comparative quantitative characteristics obtained by calculation and by various methods for five typical thrust bearings of different dimensions, operating over a wide speed range and at two mean pressure values are quoted. An evaluation of different methods for the calculation of power losses and oil consumption in thrust bearings is given. (Author)

Moskalenko, V. A.
MECHANISMS. 1963, 220p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Switches, *Positioning devices (Machinery), *Drives, Motion, *Transmissions, *Clutches, Safety devices, *Control systems, *Hydraulic systems, *Pneumatic devices.

Manufacturing Equipment and Processes

Pahlitzsch, G. and Ernst, H. O.
ABOUT THE ECONOMY OF INFINITELY VARIABLE ADJUSTABILITY OF GRINDING WHEEL-AND WORK-PIECE REVOLUTION NUMBER IN A CYLINDRICAL GRINDING MACHINE. [1963] 13p (figs refs omitted)
Order from SLA $1.60 63-20472

Partial trans. (p. 218-221) of Werkstattstechnik und Maschinenbau (Germany) 1956, v. 46, no. 5, p. 218-226.
A complete trans. is available from SLA $3.60 as 61-18915 [1961] 33p (figs omitted).

DESCRIPTORS: *Grinding wheels, Economics, *Machine tools, *Cutting tools, *Grinders, Friction, Specifications, Velocity, Abrasion, Industrial research, Manufacturing methods, Cylindrical bodies.

For abstract see Technical Translations 7: 284, 1962.

Tanaka, Tatsuo.
CHART FOR DESIGN OF CLOSED CIRCUIT GRINDING SYSTEM. [1963] 9p.
Order from SLA $1.10 63-20314

Trans. of Aufbereitungs-Technik (West Germany) 1961, v. 2, no. 5, p. 198-201.

DESCRIPTORS: *Material separation, *Grinders, Conveyors, Feedback, Materials, Particle size, Numerical analysis, Design,

Topics include; design fundamentals for the mutual relationships between fineness of feed, product and oversize particle under ideal classifier conditions; use with classifier; a new definition of separation (cut) size x_c - (practical determination of α); output of conventional mechanical classifiers; and planning closed circuit grinding.

Vöneky, G.
NEW METHOD FOR MEASUREMENT OF CLOSE FIT INTERNAL THREADS (Neues Verfahren zum Messen von Engtolerierten Innengewinden). [1963] [17p] (foreign text included) 3refs
Order from SLA $1.60 63-20052

Trans. of Werkstatt und Betrieb (West Germany) 1962, v. 95, no. 11, p. 755-758.

DESCRIPTORS: *Screw threads, Test equipment, Measurement, Microscopes, Industrial equipment

A universal comparator with internal thread measuring device is described. A tracer microscope combined with a vertical length measuring instrument permits measurement of the flank-, internal- and core diameter in the same measuring arrangement, also the determination of the gradient up to one μm with a direct reading. Conic internal thread can also be measured without difficulty.

Transport, Traction and Hoist Facilities

PROTECTIVE STRUCTURES AND COMPONENTS: SOVIET LITERATURE (COMPREHENSIVE REPORT). Rept. no. 9 reviewing Soviet Literature on Ground Support Equipment, AID Work Assignment 13. 30 Aug 63 [23p] 19refs AID Rept. P-63-113.
Order from OTS or SLA $2.60 63-24107

DESCRIPTORS: *Soil mechanics, Civil engineering, *Foundations (Structures), Bridges, Reinforced concrete, Underground structures, Transportation, Vehicles, Armed forces transportation, Traffic, Railroad tracks, Railroad cars, Barges, Ships (Nonmilitary), Buildings, Hoists, Containers, Storage tanks

Contents:
Transport
Launch site
Packaging, preservation and storage

Chertkov, N. K.
SOME SYSTEMS OF AUTOMATIC WEIGHING OF LOADS ON CONVEYERS. [1963] [10p] 5refs
C. E. Trans. 2754.
Order from OTS or SLA $1.10 63-24083

Trans. of Teploenergetika (USSR) 1962 [v. 9] no. 4, p. 12-17.

DESCRIPTORS: *Conveyors, Loading (Mechanics), Weighing, Automatic, Fuels, *Transportation.

The operation of the better-known systems of weighing loads on conveyer bands is examined. (Author)

Oliveti, Renato Alessandro.
BAGGAGE CARRIER FOR A MOTOR VEHICLE, PROVIDED WITH AN UNROLLING CANVAS ARRANGEMENT WHICH ENTIRELY COVERS THE VEHICLE, tr. by J. B. 17 Sep 63, 5p (figs omitted)
Order from OTS or SLA $1.10 63-24126

Trans. of Italian patent 506,548, cl. 7, appl. 16 Jul 53, granted 23 Dec 54, printed Jul 56.

DESCRIPTORS: *Vehicles, *Textiles, *Shelters, Bags (Containers), Storage.
In accord with the invention, the baggage carrier with the unrolling canvas arrangement is characterized by folding or sliding arms which are fastened or applied and by means of which the canvas is folded or contained in said baggage carrier, occupying a minimum volume and of minimum weight, without hindering the normal placement of baggage. (Author)

Sadchikov, F.
PRICE PER TON-KILOMETER. 21 Aug 63 [6p]
FTD-TT-63-789.
Order from OTS or SLA $1.10 63-24049

Unedited rough draft trans. of Grazhdanskaya Aviatsiya (USSR) 1963 [v. 20] no. 3, p. 9.

DESCRIPTORS: *Air transportation, *Air traffic, Economics, Costs

A discussion of the thesis of Aeroflot Engineer-pilot V. I. Pelikh titled: "Procedure for Determining the Internal Researves of Transportation Subdivisions"

Shaul'skii, F. I. and Sologub, N. K.
COOPERATION BETWEEN RAIL AND TRUCK TRANSPORTATION. [1963] 5p.
Order from OTS or SLA $1.10 63-20377

Trans. of Zheleznodorozhnyi Transport (USSR) 1963 [v. 45, no. 4] p. 31-34.

DESCRIPTORS: *Transportation, Railroads, Cargo vehicles, Cargo, Costs, Economics.

A study, carried out on the organization of local freight shipments in Moscow and surrounding territory, established that direct automotive transportation is cheaper than combined automobile-railroad for any type of freight to a distance of 100km. Tariff rates should be revised to stimulate the changeover to trucks of short-haul freight.

FERROMAGNETIC SUBSTANCE (Matiere Ferromagnetique). [1963] [20p] (foreign text included) 3refs
Order from OTS or SLA $1.60 63-20395

Trans. of Belgian patent 521,244, appl. 6 Jul 53, granted 6 Jan 54, by N. V. Philips' Gloeilampenfabrieken, Netherlands (pat. appl. filed 7 Jul 52, Netherlands).

DESCRIPTORS: *Magnets, *Ferromagnetic materials, *Iron compounds, *Barium compounds, *Strontium compounds, *Lead compounds, *Calcium compounds, Oxides, Powders.

The invention relates to the preparation of a permanent magnet whose $(BH)_{max}$ value is greater than 2.3×10^6 gauss-oersteds and preferably greater than 2.9×10^6 gauss-oersteds, constituted by ananisotropic magnetic substance whose essential component for permanent magnetic properties is a crystal of magnetoplombite structure whose composition is at least $MO.6Fe_2O_3$ -an expression in which M is one of the metals Ba, Sr of Pb; while in the crystals an atomic fraction equal to 0.4 of the quantity of barium and/or strontium and/or lead can be replaced by calcium. (Author)

GROUT FOR PRESTRESSED CONCRETE: TENTATIVE INSTRUCTIONS FOR CEMENT MORTAR GROUTING OF PRESTRESSING DUCTS (JULY 1957 VERSION). [1963] 8p 2refs
Order from SLA $1.10 63-16562

Trans. of Beton und Stahlbetonbau (West Germany) 1957 v. 52, no. 12, p. 292-294.
Also available from SLA as 58-789.

DESCRIPTORS: Ducts, *Mortar, *Cements, *Concrete, Bonding, Construction materials.

PROCESS FOR THE PREPARATION OF HIGHLY POROUS SOLID OR ELASTIC SYNTHETIC PRODUCTS. [1963] 7p
Order from OTS or SLA $1.10 63-20032

Trans. of German patent application F 2853 IVc/39b, 8 Jun 53, appl. 19 Apr 41, pub. 5 Nov 53, by Farbenfabriken Bayer A. G.

DESCRIPTORS: *Porous materials, Elasticity, *Isocyanates, *Hydrogen compounds, Chemical reactions, Plastics.

The object of the invention is a process for the preparation of strong, elastic, highly porous synthetics such as building and insulating materials, elastic fillers like padding etc. distinguished by the fact that diisocyanates or compounds reacting like them are reacted with compounds having at least two reactive hydrogens under reaction conditions which produce gas evolution. (Author)

PROTECTIVE REFLECTIVE FILMS. [1963] 3p
Order from OTS or SLA $1.10 63-20339

Trans. of French patent 1,322,470, PV no. 894,282, by Imperial Chemical Industries Ltd., filed 12 Apr 62, delivered 18 Feb 63 (pub. in Bull[etin] Off[iciel de la] Propriete Industr[ielle] (France) 1963, no. 13) (2 priorities: 12 Apr 61, 14 Mar 62, no. 13,190/1961, Gt. Brit.).

DESCRIPTORS: *Films, *Reflectors, *Metal coatings, *Plastics, Adhesives, Paper, Ethylenes.

The invention consists of a reflective protecting film comprizing an olefinic polymer or copolymer support having at least on one surface a reflective metallic coating and, on this metallic coating, the coat of an adhesive capable of gluing the film strongly to the surface itself. In order for the film to be joined easily to the surface to which it is applied, it is preferable that its thickness is not more than 75 microns and preferably 37.5 microns. The thickness of the film depends on the ultimate object and the nature of the film support. In the case of surfaces which are strongly curved and films that are oriented and rigid, the film support must be thin enough in order to be able to be closely joined to the surface to which it must be glued. The protecting reflective film according to the invention can be prepared by depositing under vacuum a metal so as to form a thin reflective layer on an olefinic polymer film supporting itself, and preferably on a film of this type that is oriented (for example biaxially). The metallic layer is then coated with an adhesive layer. (Author)

Duriez, Marius.
SOME DEVELOPMENTS IN PRESENT-DAY CEMENTS AND AGGREGATES WITH A VIEW OF OBTAINING MORTAR AND CONCRETE SATISFYING MODERN REQUIREMENTS. [1963] 19p.
Order from SLA $1.60 63-18040

Trans. of Travaux (France) 1963, v. 47, no. 339, p. 24-30.

DESCRIPTORS: *Construction materials industry, *Concrete, *Cements, *Mortar, *Rock (Geology), Basalt, Limestone, *Slags, Mechanical properties, *Materials.

The mechanical properties of aggregates produced from porphyritic and porphyroid rocks and aggregates of artificial origin are reviewed to determine their suitability for use as aggregate in quality concrete and mortar. Porphyritic and porphyroid rocks reviewed include: granular rocks of basaltic origin, trachytes, lavas, wackes, granulated and other schistose materials, and granulated limestone. Aggregates of artificial origin reviewed include: crushed slag, granulated slag, crushed brick and other ceramic products, expanded slag, pumice and pozzolan aggregate, and cinder aggregates. In a general manner, all porphyries at present in use are good road materials and are also suitable for use as aggregate in quality concrete, especially as gravel. On the other hand, when found as fine detritic sands, having been exposed for a long time to moist air, or containing traces of clay which has resulted from decomposition, they should not be used in cement mortar and concrete.

Grzymek, Jerzy.
METHOD OF PRODUCTION OF HIGH QUALITY PORTLAND CEMENT WITH SIMULTANEOUS PRODUCTION OF ALUMINUM OXIDE AS A BY-PRODUCT. [1963] [7p]
Order from OTS or SLA $1.10 63-24004

Trans. of Polish patent 43444, cl. 80 b, 3/12, in effect since 31 Dec 59, pub. 20 Sep 60.

DESCRIPTORS: Oxides, *Aluminum compounds, Production, *Cements.

The invention involves a method of producing high quality Portland cement with simultaneous production of aluminum oxide as a by-product. This method is characterized by calcining under reductive conditions at a temperature of about 1300°C(and even better at 1250°C) of raw materials selected in such a manner that clinker is obtained which decrepitates completely upon cooling. The powder thus obtained has a particle size of up to 20 microns. Because of the reduction a major part of the iron in metallic form can be removed from the clinker. The second calcining of the clinker, which is fully saturated with lime (Kuehl modulus = 1.0), takes place in the calcining zone of the kiln at least twice as fast as in methods used heretofore in calcining of this type of clinker, and the high alite content clinker thus obtained (75% alite) has flatter and finer alite crystals. The ratio of rapidly hydrating mineral components of the clinker to the weakly hydrating components of the clinker is very high, of the order of 10 plus. (Author)

Kanda, Hidejiro.
METHOD OF LAMINATING POLYVINYL ALCOHOL SHEET AND CLOTH. [1963] 3p (figs omitted).
Order from OTS or SLA $1.10 63-20332

Trans. of Japanese patent SHO-37-7141, 4 Jul 62, appl. SHO 35-42537, 18 Oct 60.

DESCRIPTORS: *Polyvinyl alcohol, Laminates, *Laminated plastics, *Plastic films, *Textiles, Bonding, Manufacturing methods.

The invention concerns a method of laminating a polyvinyl alcohol sheet and cloth wherein a polyvinyl alcohol sheet or one side of a polyvinyl alcohol sheet which is already laminated with cloth on the other side is superimposed upon cloth and is moved forward so as to spray steam upon the polyvinyl alcohol sheet through the superimposed cloth while it is passing the position of a steam nozzle; the sheet with its surface thus adequately melted is led to a heater, which heats the sheet through the superimposed cloth to dry its fused layer into a proper tackiness; then the sheet and the cloth are moved further forward onto the periphery of a rotary drum to be pressed from both side by the drum and press rollers which confront the drum in such a manner that the superimposed cloth is sticked fast to the tacky surface of the polyvinyl alcohol sheet, and the two come out forming a laminated material continuously. (Author)

Krykhtin, G. S., Pirotskii, V. Z., and Royak, S. M.
EFFECT OF WATER ADDED AT THE MILL ON THE CLINKER GRINDING PROCESS. [1963] 12p
Order from OTS or SLA $1.60 63-20309

Trans. of Tsement (USSR) 1961, v. 27, no. 3, p. 4-8.

DESCRIPTORS: *Cements, Milling machines, *Moisture, Temperature, Mechanical properties.

Test results are given of the effect of mill performance of an addition of a water-air mixture to the last grinding compartment of the mill, and of the temperature of the clinker entering the mill. (Author)

Matthieu, H.
BEHAVIOR OF CONCRETE AT 80 TO 300°C (Le Comportement du Béton entre 80 et 300°). [1963] 4p 1ref.
Order from SLA $1.10 63-20311

Trans. of Beton Herstellung Verwendung (West Germany) 1962, v. 12, no. 8, p. 363-364.

DESCRIPTORS: *Concrete, *Reinforced concrete, Thermal expansion, Thermal stresses, Reinforcing materials.

Plain and reinforced concrete exposed to temperatures up to 300°C should have as low a cement content as possible. The aggregate should have a high content of fine grains. The reinforcing rods should have a cover of at least 3 cm., as corrosion is accelerated by heat. Additional thermal stresses in reinforced concrete must be taken into consideration. Materials with highly different coefficients of thermal expansion, such as asbestos cement and reinforced concrete, should not be used together. (Author)

Penkovskii, V. V.
EFFECT OF RADIATION ON METALS AND OTHER HIGH-MELTING MATERIALS. 1963, 190p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Deistvie Oblucheniya na Metally i Nekotorye Tugoplavkie Materialy, Kiev, 1962, 183p].

DESCRIPTORS: *Radiation effects, *Metals, *Refractory materials, *Alloys, *Graphite, *Glass, *Oxides, *Carbides, *Borides, *Cermets, Phase transitions, Superconductivity, Aging (Materials), Electrochemistry, Magnetic properties, Diffusion, Creep, Elasticity, Thermal conductivity, Electrical conductance.

Salomin, T.
HOW V. I. IMPROVERS ACT IN MINERAL OILS. [1963] 100p (figs omitted)
Order from K-H $120.00 K-H 5445

Trans. from Revue de l'Institut Francais du Petrole et Annales des Combustibles Liquides, 1956 [v. 11, no. 4].

DESCRIPTORS: *Mineral oils, Viscosity, Temperature, Petroleum.

Severin, H.
FERRITES: CHEMICAL COMPOSITION, CRYSTAL STRUCTURE, AND METHOD OF MANUFACTURE (Ferrite Chemische Zusammensetzung, Kristallstruktur und Herstellungsverfahren). [1963] [25p] (foreign text included) 53refs
Order from SLA $2.60 63-18804

Trans. of Sprechsaal (West Germany) 1962, v. 95, no. 24, p. 683-688.

DESCRIPTORS: *Magnetic materials, Ferromagnetic materials, *Ferrites, Chemical properties, *Crystal structure, Spinels, Garnet, Manufacturing methods, Material forming, Sintering, *Single crystals, Crystal growth, Zone melting.

Ferrites are non-metallic magnetic materials, of great practical importance in many branches of the electrical industry. Their high specific resistance makes them particularly useful for applications in communications and high-frequency technology, where other magnetic materials show considerable eddy current losses. After a short review of the chemical composition and crystal structure of the ferrites now in use, the present-day methods of manufacturing polycrystalline materials, monocrystals, and materials with orientated crystals are described. (Author)

Siemsen [Karl].
PROCESS FOR PREPARATION OF AQUEOUS SOLID OR LIQUID HEAT AND COLD STABLE EMULSIONS FROM ALL TYPES OF FATS. [1963] [3p] 6refs
Order from OTS or SLA $1.10 63-20042

Trans. of German patent 188,712 [issued 4 Sep 07]. Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-16052 [1960] 8p.

DESCRIPTORS: *Fats, *Colloids, Preparation, Stability.

Tyurikov, D. A., Vasserman, I. S., and Levina, F. S.
QUALITY OF BLACK-PRESS AND OFFSET ILLUSTRATION INKS INCREASED. [1963] [15p]
Order from OTS or SLA $1.60 63-20563

Trans. of Poligraficheskoe Proizvodstvo (USSR) 1962, no. 1, p. 23-25.

DESCRIPTORS: *Ink, Printing, Lithography, *Carbon black, *Paper, Surface-active substances, Mechanical properties,

Wielinga, Ate Jan.
METHOD FOR MANUFACTURING A CLEANING PRODUCT, ESPECIALLY USEFUL FOR CLEANING WINDOWS, STOVES OR FIREPLACE TILES. [1963] 5p
Order from OTS or SLA $1.10 63-20338

Trans. of French patent 1,323,831 (P.V. no. 893,936) internat'l cl. C 11 d, filed 10 Apr 62, granted 4 Mar 63 (pub. in Bull[etin] Off[iciel de la] Prop[riété] Indust[tielle Indust[tielle] (France) 1963, no. 15) (convention filing: no. 263,408, 10 Apr 61, Netherlands).

DESCRIPTORS: *Cleaning compounds, *Glass, Powders, Aluminum compounds, Silicates, Magnesium compounds, Oxides, Calcium compounds, Carbonates, Iron compounds, Colloids, Binders, Solutions, Polishes,

The cleaning product is prepared by mixing an abrasive powder containing a vitreous material with a binder and/or carrier. The vitreous materials may be glass, fritted enamel, enamel flakes and other melted silicates which have a hardness approaching or equal that of glass. Besides the vitreous powdered material, the abrasive powder may contain other abrasive and/or polishing powders such as kaolin, precipitated chalk, magnesium carbonate or oxide and colcotar. The cleaning product may be prepared as a paste, stick or a liquid by using the proper binders and/or carriers.

Adhesives and Sealants

Meyer, G.
ACID PHOSPHORIC ESTERS AND FREE CARBOXYL GROUPS AS ADHESION PROMOTING AND INHIBITOR COMPLEXING AGENTS. Sep 63.
Order from TTIS $36.00 TTIS NS 132

Trans. of Farbe und Lack (West Germany) 1963, v. 69 [no. 4] p. 373-378.

DESCRIPTORS: *Phosphoric acids, Esters, Free radicals, Carboxyl radicals, *Adhesion, *Inhibition, Complex compounds

Moren, R. E.
PROCESS FOR THE PREPARATION OF WATER-SOLUBLE BINDER COMPOSITIONS, AND PREPARATIONS PREPARED ACCORDING TO THIS PROCESS. [1963] 4p 2refs
Order from OTS or SLA $1.10 63-20333

Trans. of Swedish patent 155,354, appl. 16 Dec 52 under no. 10901/1952, granted 9 May 56, pat. from 16 Dec 52, pub. 24 Jul 56, by Mo & Domsjö AB.

DESCRIPTORS: *Binders, Preparation, *Fillers, Powders, *Polyester plastics, *Cellulosic plastics, *Casting.

The invention involves a process for the preparation of water-soluble binder compositions, with the distinction that on the surface of the particles of a support material, for example, sand, dried clay, bentonite clay, kaolin, talc, cork meal, sawdust or a water-soluble binder, there is applied a coating of water-insoluble plastic, synthetic or natural rubber or resins, which is added to the support material in the dispersed condition. (Author)

SOME SURFACE MODIFICATIONS OF GLASS, WITH PARTICULAR REFERENCE TO GLASS FOR PHARMACEUTICAL USE. [1963] [22p] 1ref
Order from SLA $2.60 63-20371

Trans. of Italian (?) language article from unidentified source, 195-?.

DESCRIPTORS: *Glass, Surfaces, Pharmacology, *Containers, Chemical industry

Andryukhina, T. D. and Drozd, N. P.
BRIQUETTING OF MIXTURES FOR GLASS MAKING (Briketirovanie Shikhty dlya Varki Stekla). [1963] [14p] (foreign text included)
Order from OTS or SLA $1.60 63-18598

Trans. of Radiotekhnicheskoe Proizvodstvo (USSR) 1957, no. 8, p. 29-33.

DESCRIPTORS: *Briquettes, Mixtures, Ceramic materials, *Glass, *Material forming, Manufacturing methods.

Effective methods were sought for the briquetting of mixtures for glass making in order to eliminate a number of disadvantages resulting from the use of loose materials in glass melting. On the base of the work done, the following conclusions are derived: it is possible to prepare briquets of sufficient mechanical strength without the application of a binder. The role of the binder is played by water, which is introduced for moistening the mixture; in order to get strong enough briquets, 10 - 12 % water must be introduced into the mixture for glass No. 2; a sufficient strength of the briquets is obtained at a pressure of 125-156 kg/cm^2; the strength of the briquets 24 hours is much greater than the strength immediately after their preparation; heating of the rollers used in pressing the briquets defeats the sought- after result, as it enhances the sticking of the briquets to the compartments.

Bondarev, K. T. and Borodai, F. Ya.
THE PRODUCTION AND APPLICATION OF LIGHT-SENSITIVE GLASS (O Proizvodstve i Primenenii Svetochuvstvitel'nogo Stekla). [1963] [15p] (foreign text included)
Order from OTS or SLA $1.60 63-18615

Trans. of Steklo i Keramika (USSR) 1960, v. 17, no. 10, p. 1-4.

DESCRIPTORS: *Glass, *Photographic recording media, Theory, Manufacturing methods, Material forming.

A summary is given of photosensitive glass technology, based largely on experiences at the Avtosteklo factory in Konstantinovsk. The discussion includes theoretical considerations, compounding and forming the glass, exposure and development of the photographic image, etching and preparing colored images, and fabrication of articles.

Bondarev, K. T. and Borodai, F. Ya.
PRODUCTION AND USE OF LIGHT-SENSITIVE GLASS [O Proizvodstve i Primenenii Svetochuvstvitel'nogo Stekla]. [1963] [6p] 2refs [DSIR] NLL M. 10364.
Order from OTS or SLA $1.10 63-23512

Trans. of Steklo i Keramika (USSR) 1960, v. 17, no. 10, p. 1-4.
Another trans. is available from OTS or SLA $1.60 as 63-18615 [1963] [15p] (foreign text included).

DESCRIPTORS: *Glass, *Photographic recording media, Theory, Manufacturing methods, Material forming.

(For abstract see 63-18615)

Budnikov, P. P.
TECHNOLOGY OF CERAMICS AND REFRACTORIES. 1963, 760p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Tekhnologiya Keramika i Ogneuporov, Moscow, 1962.
An unedited rough draft trans. of p. 374-396, 400-409, 421-429 is available from OTS $2.25 as 63-11661, FTD-TT-63-104, 18 Apr 63 [81p].

DESCRIPTORS: *Ceramic materials, *Refractory materials, *Construction materials industry, Glass, Cermets, Oxides, Staining, Ceramic coatings, Physical properties, Chemical properties, Mechanical properties.

Canac, Francois and Montel, Reine.
STUDY OF SURFACE STATES, CHEMICAL AND MECHANICAL ALTERATIONS OF A GLASS SURFACE (Étude des États de Surface Altération Chimique et Mécanique d'une Surface de Verre). [1963] [28p] (foreign text included) 1ref
Order from SLA $2.60 63-20384

Trans. of Verres et Réfractaires (France) 1947, v. 1, Apr, p. 21-29.

DESCRIPTORS: *Glass, Surfaces, Corrosion, Reflectometers, Mirrors, Light, Diffusion,

Foëx, Marc.
ELECTRICAL CONDUCTIVITIES OF GLUCINIA AND OF MAGNESIA AT ELEVATED TEMPERATURE. [1963] [4p]
Order from SLA $1.10 63-20172

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1942, v. 214 [p. 665-666] (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Magnesium compounds, *Oxides, *Beryllium compounds, *Resistance (Electrical), High temperature research, *Electrical conductance, *Heat resistant materials

Jebsen-Marwedel, H.
GAS SEPARATION IN BUBBLE FORM OF SULPHATE-BEARING GLASS MELTS [Die Blasenförmige Gasausschiedung Sulfathaltiger Glasschmelzen]. [1960] 21p (figs omitted) 9refs
Order from SLA $2.60 63-20365

Trans. of Sprechsaal (Germany) 1942, v. 75, no. 13/14, p. 120-125.
Also available from SLA mi$2.70, ph$4.80 as 60-18769 [1960] [29p] (foreign text included).

DESCRIPTORS: *Glass, Melting, Sulfates, Bubbles, Separation, Gases.

Foam glass was produced from a glass of the composition 60.49% SiO_2, 16.17% CaO, 14.60% Al_2O_3, and 8.72% BaO, with the addition of 4% pyrolusite foaming agent. The product obtained was homogeneous, microporous, and had a bulk weight between 0.38 and 0.21 g/cm^3. The greater tensile strength at compression found for the alkali-free foamed glass, as compared with alkali-containing foamed glasses, is attributed to its microporous structure. The thermal characteristics were also found to be superior to other glasses tested (thermal expansion coefficient, 59.9 to 67.8x10^{-7} degrees^{-1}; incipient softening temp., 700 to 750°C; heat stability up to 1050°C). The foam glass may be used as a thermal insulation material up to temperatures of 600°C in applications where sudden temperature changes are not anticipated.

Kachan, I. S.
THE INVESTIGATION OF SOME PROPERTIES OF TITANIUM-ZIRCONIUM SILICATE GLASSES (Izuchenie Nekotorykh Svoistv Titanotsirkonievykh Silikatnykh Stekol). [1963] [32p] (foreign text included) 17refs
Order from OTS or SLA $3.60 63-20368

Trans. of Belorusskii Politekh[nicheskii] Inst[itut] Sbornik Nauch[nykh] Rabot (USSR) 1958, v. 63, p. 27-40.

DESCRIPTORS: *Glass, Silicates, Zirconium compounds, Oxides, Titanium compounds, Optical properties, Crystallization.

The regions of the glass formation and of the crystallization of titanium-zirconium silicate glasses were established. The properties of the Zr-Ti silicate glasses were investigated as a function of the glass-forming oxides. (Author)

Kitaigorodskii, I. I.
THEORETICAL BASIS OF THE SYNTHESIS OF "SITALL" FROM SLAG. 22 Aug 63 [19p] 10refs
FTD-TT-63-753.
Order from OTS or SLA $1.60 63-24041

Unedited rough draft trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1963, v. 8, no. 2, p. 192-197.

DESCRIPTORS: *Slags, *Glass, *Ceramic materials, Phase studies, Synthesis.

Kitaigorodskii, I. I. and Shirkevich, T. L.
SOME PROPERTIES OF ALKALI-FREE FOAM GLASS (Nekotorye Svoistva Besshchelochnogo Penostekla). [1963] [8p] (foreign text included) 1ref
Order from OTS or SLA $1.10 63-18621

Trans. of Steklo i Keram[ika] (USSR) 1959, v. 16, no. 10, p. 5-6.

DESCRIPTORS: *Glass, *Foams, *Porous glass, Production, Tensile properties, Thermal expansion, Melting, Stability, *Thermal insulation.

Kühne, K.
SILICATE AND BOROSILICATE GLASSES: METHOD FOR CORRECTING THE PROPERTIES OF GLASSES AND DEVELOPING GLASSES WITH CERTAIN PROPERTIES. [1963] [BGIRA] no. 578.
Order from BGIRA BGIRA-578

Trans. of Silikat Technik (East Germany) 1961, v. 12, no. 8, p. 313-316.

DESCRIPTORS: *Glass, *Silicates, *Boron compounds, Ceramic materials.

Lehnert, Lothar H.
THE HEAT SHOCK TESTING OF GLASS AND GLASS CONTAINERS (Die Wärmestossprüfung von glas und Glasgefassen). [1963] [16p] (foreign text included) 52refs
Order from SLA $1.60 63-20370

Trans. of Glastechnische Berichte (West Germany) 1957, v. 30, no. 3, p. 79-83.

DESCRIPTORS: *Containers, *Glass, Temperature, Stability, Shock resistance, Thermal stresses, *Quenching (Cooling).

Among the various testing possibilities for the determination of the temperature change stability of glass, the quenching test was selected and standardized. According to DIN 52,325 the working material "glass" is tested with the aid of well defined samples which must be free of strain. According to DIN 52,321 the influence of the form of the glass object on the temperature change stability is investigated. It is pointed out that with this test it is possible not only to determine the heat shock stability but also to judge the stress state of the glass in the hollow body under certain conditions as being harmful or favorable. (Author)

Peyches, I.
NEW STUDIES ON THE STRUCTURE OF VITREOUS STATES. [1963] [BGIRA] no. 577.
Order from BGIRA BGIRA-577

Trans. of Silicates Industriels (Belgium) 1963, v. 28, no. 5, p. 223-229.

DESCRIPTORS: *Ceramic materials, Structural properties.

Robijn, P. and Angenot, P.
EMISSIVITY PROPERTIES OF REFRACTORY MATERIALS. Aug 63
Order from BGIRA BGIRA-575

Trans. of Verres et Refractaires (France) 1963, v. 17, no. 1, p. 3-10.

DESCRIPTORS: *Refractory materials, Emissivity.

Samsonov, G. V.
HIGH-TEMPERATURE CERMETS. 1963, 170p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Vysokotemperaturnye Metallokeramicheskie Materialy, Kiev, 1962, 192p].

DESCRIPTORS: *Cermets, *Refractory materials, *Transition elements, *Borides, *Carbides, *Nitrides, *Silicon compounds, *Titanium compounds, *Vanadium compounds, *Chromium compounds, *Niobium compounds, Physical properties, Electrical properties, Semiconductors, Classification, X rays, Chemical bonds.

Schönborn, Herbert.
THE THERMAL ENDURANCE OF GLASS IN RELATION TO ITS RESISTANCE TO THERMAL SHOCK AS A PROPERTY OF THE MATERIALS (Die Wärmefestigkeit des Glases unter besonderer Berucksichtigung der Abschreckfestigkeit als einer Werkstoffeigenschaft). [1963] [35p] (foreign text included) 18refs
Order from SLA $3.60 63-20373

Trans. of Silikat Technik (East Germany) 1953, v. 4, no. 10, p. 435-442.

DESCRIPTORS: *Glass, Shock resistance, Thermal stresses, Mechanical properties.

After general remarks on the nature of the thermal endurance the thermal shock resistance of glass as a property of the material is fully discussed. Investigations are conducted on the influence of various factors which affect the resistance to thermal shock and which must be taken into consideration in the standardization of a testing method. (Author)

Sil'vestrovich, S. I. and Rabinovich, E. M.
VITREOUS-CRYSTALLINE MATERIALS. [1963] [9p] 50refs [DSIR] NLL M.10362.
Order from OTS or SLA $1.10 63-23513

Trans. of Vsesoyuznoe Khimicheskoe Obshchestvo. Zhurnal (USSR) 1960, v. 5, no. 2, p. 186-191.

DESCRIPTORS: *Glass, *Crystallization, Crystal structure, Colloids, Pigments, Reduction (Chemistry), Photosensitivity, High temperature research, Density, Mechanical properties, Microstructure, Heat treatment.

Theoretical and experimental data are presented which are of interest in connection with the problem of obtaining different forms of vitreous-crystalline materials.

Tarasov, V. V. and Chernoplekov, N. A.
NEW PROBLEMS IN THE PHYSICS OF GLASS. 1963, 225p 315refs PL-480 Comm.
Order from OTS $2.25 63-11004

Trans. of mono. Novye Voprosy Fiziki Stekla, Moscow, 1959 [270p].

DESCRIPTORS: *Glass, *Silicates, *Borates, *Phosphates, *Specific heat, *Molecular structure, *Polymers, Physics, *Semiconductors.

The structures of inorganic silicate, borate, phosphate and some oxygen-free glasses are considered from a point of view which emphasizes the high-polymer structure of their skeletons. Attention is drawn to high-polymer chain-like structures which, in the author's opinion, are fundamental to many inorganic glasses. These views are supported by the analysis of the temperature dependence of specific heat of glasses. The results of measurements of volume compressibilities by means of ultrasonics are quoted as well. At the end of the book an attempt is made to establish general characteristic features in the structure of high polymers, semiconductors and glasses. (Soviet publisher's note)

Vargin, V. V. and Tsekhomskaya, T. S.
GLASSES OF THE SYSTEM Na_2O--ZnO--Al_2O_3--P_2O_5 AS THE BASIS OF ENAMELS ON ALUMINUM. 4 June 63 [13]p. 13 refs. FTD-TT-63-464.
Order from OTS or SLA $1.60 63-23676

Unedited rough draft trans. of #Zhurnal Prikladnoi Khimii (USSR) 1962, v. 35, no. 11, p. 2363-2368.

DESCRIPTORS: *Coatings, *Ceramic coatings, *Glass, *Phosphates, *Sodium compounds, *Zinc compounds, *Aluminum compounds, Oxides, Phase studies, *Aluminum.

It was shown that some glasses on the system Na_2O--ZnO--Al_2O_3--P_2O_5 can serve as the basis of enamel on aluminum. The optimum content of the components in the glasses of the system investigated was established.

Vitman, F. F. [Boguslavskii, I. A., and Pukh, V. P.].
THE QUESTION OF THE NATURE OF THE STRENGTHENING OF GLASS. Sep 63 [BGIRA] no. 576.
Order from BGIRA BGIRA-576

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 1, p. 85-88.

DESCRIPTORS: *Glass, Tensile properties.

Zagar, Ludwig.
THE BASIS FOR THE DETERMINATION OF THE PERMEABILITY TO GAS OF REFRACTORY STRUCTURAL MATERIALS. [1963] 19p 68refs
Order from SLA $1.60 63-16856

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1955, v. 26, no. 12 [p. 777-782] [Verein Deutscher Eisenhüttenleute (West Germany). Bericht-990].

DESCRIPTORS: *Refractory materials, *Brick, Permeability, Gases, Air

After a complete evaluation of the literature it was shown that the idea of specific permeability to gas was derived from the Hagen-Poiseuille Law. This material quantity was determined on the basis of an empirical law of d'Arcy with an apparatus called the permemeter. The accuracy of this Law of d'Arcy was demonstrated mathematically. With cylindrically shaped samples of 50 mm diameter and 45 mm length the specific permeability to air was established for magnesite, hard chamotte and silica bricks according to the equation

$$D_S = 42.36 \cdot 10^{-9} \cdot \frac{Q}{(p_e - p_a)}$$

The physical cgs-system was used. Absolute unit of measurement for the specific gas permeability, the perm was proposed, and as the customary unit the nanoperm (nPm = 10^{-9} Pm) was suggested. The idea and the determination of the specific gas permeability have in this form an unobjectionable physical foundation; its determination is very simple and its size in the case of refractory construction materials is represented by whole numbers. (Author)

Fuels, Lubricants, and Hydraulic Fluids

Bossing, E.
CHEMISTRY AND TECHNIC OF ANTIKNOCK AGENTS. [1963] [10]p 53 refs
Order from SLA $1.10 63-18250

Trans. of Chemiker Zeitung (Germany) 1935, v. 59, p. 316-317.

DESCRIPTORS: *Antiknock, *Fuel additives, Fuels, Organic compounds, Peroxides, Lead compounds, Ethyl radicals, Iron compounds, Carbonyl raidcals,

Kukharenko, T. A. and Khrisanfova, A. I.
REDUCTION AND OXIDATION OF MINERAL COALS, tr. by A. L. Biran. [1963] [14]p. 20 refs. [DSIR] NLL M. 3717.
Order from OTS or SLA $1.60 63-19834

Trans. of A[kademiya] N[auk] SSSR. Otdel[enie] Tekhn[icheskikh] N[auk]. Izv[estiya] 1947, no. 7, p. 863-870.

DESCRIPTORS: *Coal, Ores (Non-metallic), Minerals, Oxidation, Reduction, Coke, Fused materials.

A considerable change in a number of properties of coal is caused by slight oxidation or reduction. In this the properties of coals as organic compounds with high molecular weights are especially apparent. The dependence of a number of properties of coals and of the products of their oxidation or reduction upon the presence of hydrogen in their composition is connected with the special function of hydrogen in forming the mobile structure of coals. The possibility exists of transforming coal from a fusible into an infusible state and back by slight action of hydrogen or oxygen, resulting in coals with plastic masses of different ductility and coke of different quality depending on the degree of reduction or oxidation of coal. (Author)

Pavlova, S. N., Dryatskaya, Z. V., and Mkhchiyan, M. A.
DETERMINATION OF THE CONTENT OF NORMAL PARAFFINIC HYDROCARBONS IN GASOLINE FRACTIONS WITH THE AID OF MOLECULAR SIEVES. [1963] 6p.
Order from ATS $8.00 ATS-61Q70R

Trans. of Khim[iya] i Tekhnol[ogiya] Topliv i Masel (USSR) 1962, v. 7, no. 3, p. 58-60.
Another trans. is available from SLA $1.10 as 63-18411 [1963] 6p.

DESCRIPTORS: *Gasoline, *Alkanes, Chemical analysis, Absorbents, Hydrocarbons.

Pawelski, O.
NEW HYPOTHESIS ON THE EFFECT OF COLD ROLLING SPEED ON LUBRICATION. Oct 63.
Order from BISI £4 15s BISI-3393

Trans. of Rheologica Acta (West Germany) 1962, v. 2, no. 4, p. 273-280.

DESCRIPTORS: Rolling mills, *Lubrication, Friction, *Lubricants

Widmaier, O.
REACTION DECOMPOSITION OF TETRAETHYLLEAD FUEL. [1963] [20p] 15refs
Order from SLA $1.60 63-18973

Trans. of Brennstoff-Chemie (West Germany) 1953, v. 34 [no. 5/6] p. 83-87.

DESCRIPTORS: *Ethyl radicals, *Lead compounds, *Gasoline, *Fuels, Decomposition, Hydrocarbons, Antiknock, Combustion,

Autoclave experiments with a 10% ethyl fluid-gasoline solution have shown that by use of a S-free gasoline, lead bromide, lead oxide, lead triethyl bromide, and oxidized hydrocarbons are formed as decomposition products. The decomposition of ethyl fluid is highly temperature-dependent. With temperatures up to 100°C and pressures from 20-60 kg./cm.^{2} the main product from ethyl fluid is lead oxide; at higher temperatures and different pressures the formation of $PbBr_2$ is favored. The lead triethyl bromide formed at low temperatures up to 100°C and high pressures (60 kg./cm.^{2}) has a favorable antiknock action. (Author)

Zrelov, V. N.
METHODS OF ESTIMATING THE QUALITY OF JET FUELS [SURVEY] Aug 63 [5p] 46refs
Available from AIAA in Its Journal, v. 1, no. 8, $5.00

Trans. of Khimiya i Tekhnologiya Topliv i Masel (USSR) 1961 [v. 6] no. 2, p. 66-70.
Also available from OTS $0.75 as FTD-TT-62-17, AD-273 404, 16 Feb 62 [20p].

DESCRIPTORS: *Jet engine fuels, Fuels, Test methods, Corrosion, Sedimentation, Storage, Stability, Moisture, Combustion, Combution chambers, Quality control,

CRIMPING METHOD FOR THERMOPLASTIC FIBERS, EQUIPMENT FOR THEIR PRODUCTION AND NEW FIBERS OBTAINED. [1963] [14p]
Order from OTS or SLA $1.60 63-20010

Trans. of Belgian patent 613,495, 5 Feb 62, by Societe Rhodiaceta (Priority claimed: France, 8 Feb 61 as 852,055 and 21 Dec 61 as 882,739 and 882,740).

DESCRIPTORS: *Fibers (Synthetic), Manufacturing methods, *Filaments, Compressive properties, *Thermoplastics, Industrial equipment, Textile industry, *Crimping tools.

The invention concerns a process for the crimping of thermoplastic fibers by bulking and compression in a restricted space, characterized by the fact that the fiber is introduced by means of a compressed fluid stream heated to a temperature which permits fixing of the fiber in a chamber where it is piled up under pressure and under the effect of the fluid, a part of which escapes on the sides in a controlled manner through orifices provided in the wall of the chamber, while the other part provides for the advance of the bulked fiber up to its outlet from the chamber. The invention also concerns equipment for the realization of the above process, characterized by the fact that it essentially consists of an injector with a conduit for the fiber and feed pipelines for the heated fluid, and of a tubular chamber with orifices in the median zone and connected to the injector. Preferably, this chamber is concave at its lower end in order to create a supplementary resistance for the passage of the fiber and in the same manner to increase the hold-up and consequently the crimp. (Author)

PROCESS AND PRODUCT FOR TREATING LEATHER. [1963] 21p
Order from OTS or SLA $2.60 63-20025

Trans. of French patent 1,278,642, appl. 14 Oct 60, issued 6 Nov 61, by Titecote Corp.

DESCRIPTORS: *Leather, Wear resistance, Processing, *Hydrazines, Isocyanate plastics, Thiocyanates, Polymers, Alcohols, Amines, Impregnation,

A process is described for treating leather, preferably in the unfinished state, with a substituted diamine which is the reaction product of a diisocyanate or diisothiocyanate with a polyalcohol, a polyamine or a polyaminoalcohol. The treated leather has appreciably improved wear and abrasion resistance, without loss of conventional leather physical properties, and remains essentially flexible.

PROCESS FOR PREPARATION OF LEATHER. [1963] 4p 3refs
Order from OTS or SLA $1.10 63-20040

Trans. of German patent application W 14358, 27 Feb 56, by Jacques Wolf & Co., U.S.A.

DESCRIPTORS: *Leather, Processing, Cyano radicals, Guanidines, Amides, Surface active substances, Sulfonic acids, Condensation reactions.

The invention relates to a process for preparation of leather distinguished by the fact that dicyandiamide-HCHO condensation products with a surface active organic compound containing a sulfo-group are applied to leather in aqueous solution. (Author)

Androsov, V. F.
USE OF VAT SOLS FOR DYEING WOOL (Primenenie Kubozolei dlya Krasheniya Shersti) tr. by B. Ribush. [1963] [13p] (foreign text included) 12refs [CSIRO] Trans. no. 6266.
Order from OTS or SLA $1.60 63-24077

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Tekhnologiya Tekstil'noi Promyshlennosti (USSR) 1962 [v. 6] no. 2, p. 85-90.

DESCRIPTORS: *Woolen textiles, *Dyeing, Fibers, Colors, Mixtures.

Determination was made of the optimum formulae and regimes for dyeing wool fibre with vat sols and developing the colours by the chromate method. The recommended formulae and regimes for dyeing wool with Russian-made vat sols have proved themselves in industrial tests; they have improved the quality of the finished products. It is possible to use mixtures of indigo sols and vat sols for dyeing wool fibre and wool fabrics (containing up to 7.5% of Capron); this indicates that the use of vat sols opens up new coloristic possibilities. The fastness of the colours of the finished product is good, as good as any obtained with other classes of dyes. (Author)

Blinov, V. A., Basova, L. V., Anishchuk, E. N., Knyaginina, I. P., and Rumyantseva, L. P.
THE EMULSION METHOD OF DYEING WOOL, RECONSTITUTED FIBRE, AND SYNTHETIC FIBRE (Emul'sionnyi Metod Krasheniya Shersti Iskusstvennykh i Sinteticheskikh Volokon) tr. by B. Ribush. [1963] [12p] (foreign text included) 4refs [CSIRO] Trans. no. 6453.
Order from OTS or SLA $1.60 63-24074

Trans. of Tekstil'naya Promyshlennost' (USSR) 1962 [v. 22] no. 10, p. 57-60.

DESCRIPTORS: Fibers (Synthetic), Fibers, Woolen textiles, *Dyeing, Colloids, Organic compounds, Textiles.

A proposed method of dyeing wool, polyamide fibres, and other synthetic fibres, with the use of solvents, reduces the consumption of the latter from 150-200% to 2-3% of the weight of the fibre. The best results are obtained when emulsions of organic liquids are used which are not solvents for the dyes. The two methods are particularly useful for developing methods of

continuous dyeing of fibres. It has been established that it is possible to dye polyamide and polyacrylnitryl fibres in one minute. The use of emulsions of organic compounds in printing yields even, pure, and deep colors. (Author)

Gunder, O. A. and Lysykh, A. N.
REDUCTION IN THE MOISTURE ABSORPTION OF KAPRON ARTICLES. [1963] 4p
Order from ATS $6.00 ATS-40Q72R

Trans. of Plasticheskie Massy (USSR) 1963, no. 4, p. 70-72.

DESCRIPTORS: *Fibers (Synthetic), Absorption, Moisture, Reduction.

Usenko, V. A., Saidmuratov, S., and Kapustina, L. D.
METHODS FOR THE PRODUCTION OF KAPRON STRETCH YARNS. [1963] 4p 1ref [BNSL] T. 1484 [DSIR] NLL M. 10380.
Order from OTS or SLA $1.10 63-23517

Trans. of Tekstil'naya Promyshlennost' (USSR) 1962, v. 22, no. 3, p. 42-44.

DESCRIPTORS: *Fibers (Synthetic), Textile industry, Machines, Production, Mechanical properties, *Nylon,

The traditional, multi-stage process of manufacturing stretch yarns is uneconomical relative to any of the continuous processes studied because the large number of transfers entails considerable wastage of labour, equipment and production space. The KOME-145 requires major modification to its design. In its present form it cannot be recommended as a mass production model. After refinement of its design and a further technological study the E-90-I-SKh1 ought to be suitable for producing stretch and bulked yarns. (Author)

Veideman, E. B. and Meos, A. I.
A METHOD OF REDUCING THE AMOUNT OF HYDROGEN SULFIDE RELEASED FROM THE COAGULATING BATH IN VISCOSE RAYON PRODUCTION. [8 Feb 63] [11]p. 5 refs.
Order from OTS or SLA $1.60 63-18269

Trans. of Khim[icheskie] Volok[na] (USSR) 1961, no. 6, p. 39-41.

DESCRIPTORS: *Rayon, *Viscose, Production, Coagulation, *Waste gases, Hydrogen compounds, *Sulfides, Oxidation, *Sodium compounds, *Sulfites.

The influence of sodium sulfite on the variation of the amount of hydrogen sulfide given off under the direct effect of the coagulating bath on the viscose was studied. It was shown that the addition of 1-1.5% of sodium sulfite to the coagulating bath reduces the amount of hydrogen sulfide given off in the viscose rayon production to 13-3% of that given off by coagulating baths containing no sodium sulfite.

Virnik, A. D., Makhkamov, K., and Rogovin, Z. A.
THE DEVELOPMENT OF METHODS FOR INCREASING THE FASTNESS TO LIGHT AND HEAT OF CELLULOSIC FABRICS, tr. by I. Gawronska. 18 Jun 63 [8p] 8refs Courtaulds Misc. Lit. 3640; [DSIR] NLL M. 5349.
Order from OTS or SLA $1.10 63-23496

Trans. of Khim[icheskie] Volok[na] (USSR) 1963, no. 1, p. 47-50.

DESCRIPTORS: *Textiles, *Cellulose, Cotton textiles, Viscose, Cellulose acetates, Stability, Light, Heat, Hydroxides, Ethyl radicals, Sulphonyl radicals, Alkoxy radicals, Benzenes, Sulfates, Absorbents, Antioxidants, Ultra-violet filters, Filters.

The thermal and light stability of cotton, viscose and acetate fabrics was increased considerably by the introduction of small amounts of aromatic amino groups into the macromolecule of the cellulose, or by the addition of antioxidants. lumogens and ultraviolet absorbers. The introduction of aromatic amino groups into the cellulose macromolecule, carried out in an aqueous medium, is more rational than the addition of stabilizers, because the latter may be removed (washed out or they may migrate at higher temperature) during utilization of the fabrics. (Author)

Paints and Finishes

Feuerberg, H.
CONTRIBUTION TO THE ANALYSIS OF DRIED COATS (Beitrag zur Analyse Getrockneter Anstriche). [1963] [23p] (foreign text included) 12refs.
Order from SLA $2.60 63-20236

Trans. of Farbe und Lack (West Germany) 1961, v. 67, no. 11, p. 693-699.

DESCRIPTORS: *Coatings, Pigments, Binders, Desiccants, Dehydration, Linseed oil, Fatty acids, Solubility, Decomposition, Paper chromatography, Infrared spectrophotometers.

While the analysis of coating agents and their components gives reliable results, the composition of dried coats can be determined mostly only with difficulty. Paper-chromatographic identification of fatty acids contained in coats enables a statement about the kind of oil binders contained in the coat still only in very small amounts of samples. Entirely insoluble and not-saponifiable coats can be pyrolyzed, and the pyrolysates can be investigated partly paper-chromatographically or with the aid of an infrared spectral photometer. (Author)

Gurevich, T. N. and others.
THE PHOTOCHEMICAL ACTIVITY OF PIGMENTS AND METHODS OF ITS DETERMINATION. Sep 63.
Order from TTIS $12.00 TTIS NS 130

Trans. of Lakokrasochnye Mat[erialy i Ikh Primenenie] (USSR) 1963, no. 1, p. 55-57.

DESCRIPTORS: *Pigments, *Photochemistry, Chemical analysis

Hart, H.
THE MEASUREMENT OF COATING THICKNESS BY MEANS OF RADIATION. Oct 63.
Order from BISI £ 7 BISI-3282

Trans. of Elektrie (Germany) 1962 [v. 16] no. 3, p. 82-88.

DESCRIPTORS: *Coatings, Thickness, Nuclear industrial applications, X-rays, Fluorescence, Beta particles, Non-destructive testing,

Kutyanin, G. I.
STUDY OF THE AGEING OF PAINT COATINGS BY MEASURING THEIR OHMIC RESISTANCE. Sep 63.
Order from TTIS $15.00 TTIS NS 128

Trans. of Lakokrasochnye Mat[erialy i Ikh Premenenie] (USSR) 1963, no. 1, p. 52-54.

DESCRIPTORS: Resistance (Electrical), Measuring devices (Electrical and electronic), *Coatings, *Paints, Aging (Materials)

Lamprecht, Wolf.
MODERN METHODS IN THE ANALYSIS OF LACQUER: EXAMPLES FOR APPLICATION AND LIMITS OF ITS USE (Moderne Verfahren in der Lackanalytik: Beispiele für Anwendung und Grenzen ihres Einsatzes). [1963] [21p] (foreign text included)
Order from SLA $2.60 63-20268

Trans. of Farbe und Lack (West Germany) 1961, v. 67, no. 9, p. 560-565 (Institut für Lackforschung und Materialprüfung (West Germany). Mitteilung-27).

DESCRIPTORS: *Varnishes, Pigments, Solvents, Binders, Chemical analysis, Ultraviolet spectroscopy, Infrared spectroscopy, Electrometers.

Several newly arising analytical problems are discussed besides the many problems which always return. In the field of pigment analysis through the use of examples, the application of chelatometry and electrometry, and, in solvent- and binder analysis, mainly the application of UV- and IR-spectrometry, are delt with. (Author)

Meyer, G.
MOLYBDENUM RED: AN OUTSTANDING ANTICORROSION PIGMENT. Sep 63.
Order from TTIS $27.00 TTIS NS 131

Trans. of Deutsche Farben-Z[eitschrift] (West Germany) 1963, v. 17, May, p. 201-203.

DESCRIPTORS: *Pigments, *Corrosion inhibition, *Colors, Molybdenum

Pamfilov, A. V. and others.
RELATION BETWEEN THE PHOTOCATLYTIC ACTIVITY OF ZINC OXIDE AND TITANIUM DIOXIDE AND DEGRADATION OF FILMS CONTAINING THESE PIGMENTS. Sep 63.
Order from TTIS $12.00 TTIS NS 129

Trans. of Lakokrasochnye Mat[erialy i Ikh Primenenie] (USSR) 1963, no. 1, p. 23-26.

DESCRIPTORS: *Pigments, *Films, Degradation, Dioxides, *Titanium compounds, Oxides, *Zinc compounds, Photochemistry, Catalysis

Photographic Materials

Anfilov, I. V.
THE NATURE OF THE FRINGE-EFFECT IN ELECTROPHOTOGRAPHY. [1963] 10p. (fig omitted) 8 refs.
Order from OTS or SLA $1.10 63-18599

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 2, p. 105-109.

DESCRIPTORS: *Electrophotography, Photographic images, Dyes, Particles, Electrostatic precipitation, Electric fields.

The speed of development depends not only on the magnitude and configuration of the charge on the electrophotographic layer carrying a latent image, but also on the parameters of development. All other conditions being equal, the fringe-effect is weakened when the charge and concentration of particles in the developer and the development are increased. In contrast to liquid developers, the use of dry developers with weakly-charged dye particles decreases the fringe-effect.

Balabukha, D. K.
INVESTIGATION OF THE COLOR GAMUT. II. COLOR GAMUT OF DYES. [1963] 19p. 12 refs.
Order from OTS or SLA $1.60 63-18786

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8 [no. 1] p. 10-21.

DESCRIPTORS: *Color film, Dyes, Colors, Standards, Absorption, Photographic images,

The color gamut of dyes used in the TsP multilayer positive film and three versions of imbibition processes used in subtractive color reproduction was investigated. Zone color coordinates of unit quantities of dyes used for these processes were calculated and equations used for conversion from subtractive coordinates to zone coordinates were derived. A method is given for plotting a color solid of dyes and solids were plotted for four above-mentioned processes. It was shown that the volume of color solid of dyes is proportional to the amount of color information transmitted by these dyes and that the volume of color solid is measured by the area of the color solid section with unit plane, or its projection on the color graph of zone system of coordinates. The imbibition process I (the so-called old trial of dyes) has the largest color gamut.

Baranov, G. S., Katsenelenbogen, E. D., and Krupenin, L. K.
STANDARDIZATION OF THE METHOD OF GENERAL SENSITOMETRIC TESTING OF MULTILAYER COLOR MATERIALS. [1963] 12p. 19 refs.
Order from OTS or SLA $1.60 63-18778

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 1, p. 71-74.

DESCRIPTORS: *Color film, *Photosensitivity, Standardization, *Photographic emulsions, Density, Optical properties, Dyes, Tests.

The standardized method of general sensitometric testing of color photographic materials (GOST 9160-50) and the effective GOST 2817-50 standard on the method of testing of black-and-white materials provide for an application of various light-sensitivity criteria.

Borin, A. V., Moshkina, T. M., Mishakova, M. V., and Shaimardanova, L. R.
THE SENSITIZING EFFECT OF SOME POLYETHYLENE GLYCOLS. [1963] 4p 13refs
Order from OTS or SLA $1.10 63-20262

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 3, p. 211-212.

DESCRIPTORS: *Polymers, *Ethylenes, *Glycols, *Photographic emulsions, *Photosensitivity, Polyethylene plastics.

The purpose of the present work was the possibility of increasing the light-sensitivity of photographic emulsions with chemically-homogeneous polyethylene glycols of the formula $HO(CH_2CH_2O)_nH$, and also of alkyl polyethylene glycol ethers of the formula $C_{10}H_{21}O(CH_2CH_2O)_nH$, with a molecular weight of 800 to 4, 500.

Broun, Zh. L. and Chibisov, K. V.
COMPARING THE CHEMICAL AND PHYSICAL DEVELOPMENTS. [1963] 6p. 5 refs.
Order from OTS or SLA $1.10 63-18783

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 1, p. 59-61.

DESCRIPTORS: *Photographic emulsions, *Light, *Absorption, *Photochemistry, Photographic chemicals.

A differential photometric study was made of the light absorption of thin emulsion layers at their earlier stages of development under various conditions. The development process was studied on a silver iodobromide emulsion diluted (after one hour of chemical ripening) with a gelatin solution having a ratio of 1:25. The developers used were: 1. Metol hydroquinone developer with a large content of sodium sulfite (D-76). 2. Physical metol developer with citric acid. 3. Glycin developer without sulfite and potassium bromide. 4. Normal glycin developer (containing 50 grams of Na_2SO_3 per liter of solution). 5. Metol hydroquinone developer with sodium thiosulfate (7.5 grams of $Na_2S_2O_3 \cdot 5H_2O$ per liter solution). Results show when compounds dissolving AgBr are included in the developer, the development begins by a process of solution of the solid phase, that is, by a liberation of silver ions from the lattice. It is concluded that the chemical development follows the physical development mechanism under conditions of normal chemical development.

Churaeva, A. M. and Sheberstov, V. I.
THE PROBLEM OF THE MECHANISM OF THE EFFECT OF POLYETHYLENE GLYCOL IN A PHOTOGRAPHIC DEVELOPER. [1963] 4p 4refs
Order from OTS or SLA $1.10 63-20260

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 3, p. 212-213.

DESCRIPTORS: *Polymers, *Ethylenes, *Glycols, *Photographic emulsions, *Photosensitivity, Photographic chemicals, *Heat of activation, Photographic images.

The addition of polyethylene glycols to a photographic emulsion or to a developer results in acceleration of the development or to attainment of maximal light-sensitivity in a shorter time and with lower fog-density than if these substances are not used. Some results are described in the present paper, for the purpose of determining the mechanism of the indicated effect of polyethylene glycols. (Author)

Fridkin, V. M. and Barulin, Yu. N.
TWO MECHANISMS OF FORMATION OF THE LATENT ELECTROPHOTOGRAPHIC IMAGE. [1963] [10p] 7refs
Order from OTS or SLA $1.10 63-20021

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 145, no. 1, p. 78-81.

DESCRIPTORS: *Electrophotography, *Photographic images, Electrical double layer, Surface properties, Ions, *Selenium compounds, *Zinc compounds, *Oxides, Semiconductors, Styrene plastics, Dielectric films, Photoconductivity, Photosensitivity.

The surface of electrophotographic ZnO and amorphous selenium layers was coated with a optically-transparent insulating film of polystyrene several microns thick. Exposure-interval I curves $Q = Q(t, I)$ for an electrophotographic layer of amorphous selenium covered with an insulating film, on the surface of which positive ions from a corona discharge in air are adsorbed, coincides with the corresponding curves obtained for a layer without a film. This indicates that the sole mechanism which is the basis of formation of the latent electrophotographic image in amorphous selenium layers may be the formation of a double electric layer. Exposure-interval I curves $Q = Q(t, I)$ for an electrophotographic layer made of ZnO covered with an insulating film, on the surface of which negative ion from a corona discharge in air are adsorbed, do not coincide with corresponding curves obtained for a layer without a film. Also, the curves are different from the curves of the amorphous selenium. The results obtained indicate that the mechanism of formation of the latent electrophotographic image in ZnO cannot be connected with mass-discharge of the layer and the formation of a double electric layer on its surface but must be connected with a decrease in the actual surface charge. One property common to electrophotographic layers is that the layers seem to lose sensitivity through repeated screening.

Gainullin, R. M. and Usachev, A. A.
8-MILLIMETER MOTION PICTURE CAMERA "EKRAN". [1963] 5p
Order from OTS or SLA $1.10 63-18720

Trans. of Tekhnika Kino i Televideniya (USSR) 1963, v. 7, no. 3, p. 73-74.
Another trans. is available from OTS $1.25 in 63-21885, JPRS-19331, 22 May 63, 40p.

DESCRIPTORS: *Motion-picture cameras,

The features and accessories of the camera are described. The camera is designed for amateur photography.

Grechko, M. K., Natanson, S. V., and Al'perovich, M. A.
SPECIFIC STATE OF FORMATION OF J-POLYMERS ON GRAINS OF VARIOUS SILVER IODOBROMIDE EMULSIONS. [1963] 4p. (figs. omitted) 11 refs.
Order from OTS or SLA $1.10 63-18075

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1952, v. 7, no. 2, p. 142-145.

DESCRIPTORS: *Photographic emulsions, *Silver compounds, *Iodine compounds, *Bromides, Absorption spectrum, Sensitivity, Stability, *Dyes, *Thiocyanines, *Polymerization.

The absorption and sensitization spectra of photographic emulsions containing dyes which have different degrees of tendency to polymerization, are investigated. Four commercial silver iodobromide emulsions (I-IV), prepared by ammoniacal and neutral methods with various grain sizes, either without sta-salt (5-methyl-7-hydroxy-1, 3, 4-triazaindolizine), or stabilized with this agent before sensitization (8×10^{-4} mole/mole of silver halide) are studied. By this method, the effect of sta-salt on the aggregation of dye is the highest.

Gurvich, A. M.
INCREASING THE INTENSIFYING EFFECT AND RESOLVING POWER OF CALCIUM-TUNGSTATE X-RAY SCREENS. Read at the All-Union Conference of X-Ray Operators and Radiologists (no. 7) Saratov, 1958. [1963] 15p 18refs
Order from OTS or SLA $1.60 63-20578

Trans. of Novosti Med[itsinskoi] Tekhniki (USSR) 1960, no. 6, p. 48-56.

DESCRIPTORS: *X-ray tubes, *Calcium compounds, *Tungstates, Coatings, Intensity, Resolution, X-rays, *Radiographic film, X-ray photography, *Phosphorescent materials

The dependence of the intensifying effect and the resolving power of calcium tungstate x-ray screens upon their position with respect to the film and the source of x-ray radiation, upon the distribution of phosphor between the front and the rear screens of the set and upon the phosphor grain size, was investigated. The foundations were analyzed for the pattern of rules observed. Different degrees of changing these properties by increasing the grain size and the coating weight of luminophor of the front and the rear screens was used for obtaining sets of medical intensifying x-ray screens with optimum characteristics, that is, the intensification factor and the resolving power. The front screen, its thickness and to a smaller degree, the grain distribution of the luminophor by grain size within the ordinary tube voltage range used in medical radiography, has the decisive effect on the resolving power of the set. (Author)

Kirillov, N. I., Deberdeev, M. Yu., and Kirillova, N. E.
INVESTIGATION OF LIGHT-SENSITIVE MATERIALS COATED WITH EMULSION CONTAINING DEVELOPING AGENTS. [1963] 24p 17refs
Order from OTS or SLA $2.60 63-20573

Trans. of Tekhnika Kino i Televideniya (USSR) 1963, v. 7, no. 1, p. 38-47.

DESCRIPTORS: *Photographic film, Photographic emulsions, Photographic chemicals, Photosensitivity, Photographic processors

A number of positive effects, such as, a decrease in the gamma (coefficient of contrast) value of light-sensitive emulsion layers obtained, almost a constant state of the gamma value within a wide range of development times, selective hardening of the gelatin layer and others were found as a result of investigations of adding developing agents to photographic emulsions. These effects can be used successfully for coating various kinds of light-sensitive materials. This was proved for fine-grain positive film treated and tested under pilot plant conditions. Some comments and discussions of problems related to the actual application of light-sensitive materials containing developing agents, were examined. (Author)

Levinson, I. B. and Plavina, I. Z.
THE MECHANISM OF FORMATION OF THE LATENT ELECTROPHOTOGRAPHIC IMAGE IN ZINC OXIDE LAYERS [O Mekhanizme Obrazovaniya Skrytogo Elektrofotograficheskogo Izovrazheniya v Sloyakh iz Okisi Tsinka]. [1963] [7p] 7refs
Order from OTS or SLA $1.10 63-20018

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 4, p. 822-824.
Other translations are available from OTS or SLA $1.10 as 62-20019 [1962] [8p] and from ATS $6.00 as ATS-14Q68R [1963] 4p.

DESCRIPTORS: *Photographic images, *Electrophotography, Electrical double layer, Surface properties, Ions, *Zinc compounds, *Oxides, Semiconductors

Markevich, N. N.
HIGH-SPEED ELECTROPHOTOGRAPHIC PAPER. [1963] 4p. 18 refs.
Order from OTS or SLA $1.10 63-18730

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1963, v. 8, no. 2, p. 135-137.

DESCRIPTORS: *Electrophotography, *Photographic paper, Semiconducting films, Photoconductivity, Photosensitivity, Zinc compounds, Oxides, Binders, Dyes, Cadmium compounds, Sulfides, Selenium compounds.

A new high-speed electrophotographic paper (EFO-2) was manufactured. As compared to the EFO-1 paper, the EFO-2 has a higher spectral sensitivity and a speed sufficient for producing high-quality writing with a light-beam that is over 4-5 times faster. A table lists the composition and properties of the two electrophotographic papers.

Schumacher, Alfred.
PROCESS FOR RETOUCHING ORIGINALS USED IN REPRODUCTION, tr. by Joseph Schall. 24 Jun 63, 4p 3refs
Order from OTS or SLA $1.10 63-23578

Trans. of German "Auslegeschrift" (DAS) 1,064,809, cl. 57d, 1/01, internat'l cl. G 03f, by Agfa Aktiengesellschaft, filed 29 May 54, appl. announced pub. 3 Sep 59.

DESCRIPTORS: *Photography, Color film, *Photographic emulsions, Photographic chemicals, Dyes, Photoengraving.

A process for retouching originals especially transparencies for technical printing purposes is described. The originals are combined with uniformly dyed layers whose color intensity can be reduced or strengthened, or whose color shade can be strengthened by appropriate processing baths. Acid or alkaline solutions are used as processing baths. (Author)

Sheberstov, V. I., Kheinman, A. S., and Borodkina, M. S.
INVESTIGATION OF THE TEMPERATURE RELATIONSHIPS OF PHOTOGRAPHIC DEVELOPMENT. IX. THE ACTIVATION-ENERGY OF DEVELOPMENT OF PECULIAR DEFECTS OF SILVER HALIDE CRYSTALS IN PHOTOGRAPHIC LAYERS. [1963] 12p 14refs
Order from OTS or SLA $1.60 63-18184

Trans. of [Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii] (USSR) 1962, v. 7, no. 3, p. 182-186.

DESCRIPTORS: *Photographic emulsions, *Photosensitivity, Silver compounds, Bromides, Iodides, Bromine compounds, Solutions, Bromination, *Heat of activation, Crystal lattices, Crystals, Halides.
Treatment of silver iodobromide emulsions with bromine-water results in practically complete loss of light-sensitivity in both surface- and depth-microcrystals. The activation-energy of development of fog increases sharply. On analogous treatment of silver bromide emulsions the surface-sensitivity is reduced yet not suppressed completely, but the depth-sensitivity increases. The activation-energy of surface-development of fog and of image increases. The activation-energy of development of fog in depth remains unchanged, but the activation-energy of development of image in depth decreases. (See also 63-18183)

Solov'ev, S. M. and Rodionova, N. I.
A STUDY OF DYE ADSORPTION ON SILVER HALIDES IN THE RANGE OF LOW DEGREE OF SURFACE SATURATION. [1963] 14p 10refs
Order from OTS or SLA $1.60 63-20132

Trans. of Zhur[nal] Nauch[noi i] Priklad[noi] Fot[ografii i] Kinemat[ografii] (USSR) 1961, v. 6, no. 5, p. 323-333

DESCRIPTORS: *Photographic emulsions, Silver compounds, Halides, *Adsorption, *Dyes, Surface properties, Bromides, Complex compounds, Photosensitivity, Chemical indicators,

The state of aggregation and the heterogeneous nature of the surface filling are significant factors in the explanation of the departure of dye adsorption from the Paneth-Fajans law. Comparison of the adsorption of the fluoresceins investigated shows that an addition of four atoms of bromine (eosin) to the molecule of the initial fluorescein dye does not appreciably affect the nature of adsorption of these dyes at various pBr. The addition of two (diiodofluorescein) and especially four atoms of iodine (erythrosin) completely alters the adsorption properties of the initial fluorescein, raising them sharply in the range of pBr greater than 5. The most effective sensitizer, erythrosin, possesses the highest adsorption properties in the pBr range in which silver halide emulsions are actually sensitized, i.e. at pBr less than 5. Diiodofluorescein is next as to the value of adsorption in the pBr range indicated above. The other dyes are not adsorbed in this pBr range at all. This explains the absence of sensitizing effect except in the case of eosin which produces a pronounced sensitizing effect.

Zaitsev, B. D., Naimark, A. M., and Reznik, I. S.
PROCESS FOR PREPARING LITHOGRAPHIC (PLANOGRAPHIC) PLATES, tr. by L. H. 27 Jun 63, 3p
Order from OTS or SLA $1.10 63-23583

Trans. of USSR author's certificate 129,943, cl. 57d, 2/01, appl. 16 Oct 58, pub. 1 Jul 59 (pub. in #Byulleten' Izobretenii (USSR) 1960, no. 13).

DESCRIPTORS: *Lithography, *Photographic paper, Images, Photosensitivity, Photoengraving.

A process is described for preparing lithographic (Planographic) printing plates which uses technical printing paper (reflex or photoslatic paper) as the negative photosensitive material. The technical printing paper increases the contrast range of the image and lowers the costs of the process.

Plastics

PROCESS AND INSTALLATION FOR THE PRECIPITATION OF COLLOIDAL SOLUTIONS AND RESULTING PRODUCTS. [1963] 10p (figs omitted).
Order from OTS or SLA $1.10 63-20343

Trans. of French patent 773,885, gr. 14, cl. 8, by Kodak-Pathé, appl. 22 Aug 33, granted 10 Sep 34, pub. 27 Nov 34.

DESCRIPTORS: *Cellulose acetate, *Colloids, *Chemical precipitation, Pellets, Preparation.

PROCESS FOR ACCELERATING THE REACTION OF POLYFUNCTIONAL ISOCYANATES OR SIMILARLY ACTING SUBSTANCES WITH POLYHYDROXY OR POLYCARBOXY COMPOUNDS. [1963] 2p
Order from OTS or SLA $1.10 63-20259

Trans. of German [patent] application D 5931 IVc.39c, 31 Dec 53.

DESCRIPTORS: *Isocyanate plastics, Isocyanates, Hardening, *Catalysts, *Lactams, Pyrrolidone

The invention relates to a process for accelerating the reaction of polyfunctional isocyanates or similar acting substances with polyhyroxy-, or polycarboxy compounds distinguished by the fact that the reaction is carried out in the presence of small amounts of lactams. (Author)

TREATMENT FOR CONVERSION OF CERTAIN WATER INSOLUBLE MIXED POLYMERS OF ACRYLONITRILE INTO WATER SOLUBLE COMPOUNDS. [1963] [5p]
Order from OTS or SLA $1.10 63-20035

Trans. in manuscript of German patent application R 8517, 8 Mar 52.

DESCRIPTORS: *Acrylic resins, Wastes (Industrial), *Acrylonitrile polymers, Solubility, Saponification.

Ashikava, Nobuyuki.
POLYMERIZATION OF VINYL CHLORIDE WITH TRIETHYLALUMINUM METAL TRANSITION COMPOUND: ADDITIVE CATALYST. [1963] 16p
Order from K-H $16.00 K-H-12816

Trans. of Kobunshi Kagaku (Japan) 1962, v. 19, no. 212, p. 728-733.

DESCRIPTORS: *Polyvinyl chloride, Polymerization, Ethyl radicals, Aluminum compounds, Transition elements, Additives, Catalysts.

Behr, E.
CROSSLINKED POLYETHYLENE FILLED WITH CARBON BLACK. [1963] 16p
Order from ATS $14.85 ATS-34Q72G

Trans. of Kunststoffe (West Germany) 1963, v. 53, no. 8, p. 502-509.

DESCRIPTORS: *Polyethylene plastics, *Carbon black, Fillers.

Fox, Daniel W.
POLYCARBONATE PRODUCING METHOD. [1963] 9p 3refs
Order from OTS or SLA $1.10 63-20334

Trans. of Japanese patent publication 61-893, 22 Feb 61, appl. 58-22885, 13 Aug 58, by General Electric Co., U.S.A. (priority claimed: 22 Aug 57, U.S.A.).

DESCRIPTORS: *Phenolic plastics, Production, Phenols, *Diphenyl, Halides, Carbonyl radicals, *Phosgene, Sulfones, Ethers, *Copolymerization, *Plastic films, *Plastic coatings, *Fibers (Synthetic), *Adhesives, Additives, *Electric insulation.

The invention relates to a process for the preparation of polycarbonate copolymer by reaction of carbonyl halide and dihydric phenols characterized by the use of dihydric phenols of two different structures, one of which is a mononuclear phenol or a polynuclear phenol being bonded by other than an oxygen linkage, while the other is a polynuclear phenol bonded by means of ether linkage. (Author)

Graulich, Wilhelm, Schneider, Paul, and Scriba, Gottfried.
MOLDING MATERIAL FOR THE PRODUCTION OF OBJECTS OF HIGH IMPACT AND NOTCHED IMPACT STRENGTH, tr. by J. S. 26 Jun 63, 7p 1ref
Order from OTS or SLA $1.10 63-23579

Trans. of German "Auslegeschrift" (DAS) 1,140,706, cl. 39b, 22/06, by Farbenfabriken Bayer Aktiengesellschaft, appl. 19 Jun 57, appl. announced and pub. 6 Dec 62.

DESCRIPTORS: *Molding materials, *Plastics, Butadienes, Acrylonitriles, Thermoplastics, Styrenes, Polymers, Tensile properties, Deformation, Shock resistance, Fracture (Mechanics).

Molding material for producing objects of great impact and notched-impact strength from 10 to 75 percent by weight of a rubberlike copolymer based on butadiene and acrylonitrile, on the one hand and 90 to 25 percent by weight of a thermoplastic copolymer based on styrene or styrene derivatives and acrylonitrile, on the other hand, whereby the rubberlike copolymer component may contain interpolymerized olefinically unsaturated monomers with carbonyl groups as self-cross-linking groups and/or cross-linking agent, and the thermoplastic copolymer component contains up to about 10% by weight of an interpolymerized conjugated diolefine, characterized by a content of rubberlike copolymer polymerized during preparation to a yield of over 90%. (Author)

Hoover, F. W.
NEW PROCESS FOR MANUFACTURE OF ISOCYANATES [19 Mar 63] 19p 4refs
Order from OTS or SLA $1.60 63-20027

Trans. of French patent 1,299,557, appl. 15 May 61, delivered 18 Jun 62, by DuPont.

DESCRIPTORS: *Isocyanate plastics, Manufacturing methods, *Styrenes, *Butenes, *Benzenes, Isocyanic acids, *Urea derivatives, Plastics, *Plastic coatings, *Adhesives, *Fibers (Synthetic),

In the invention process, isocyanic acid is reacted with at least one vinylidene compound at a temperature between 25 and about 200°C. The isocyanate group (NCO) generally adds to the carbon having the most substituents. Among new isocyanates prepared by the invention process, those characterized by the formula: $H_2C = C(CH_3) - (Arylene)_n - C(CH_3)_2NCO$ and

(OCN) $(CH_3)_2C$ - Arylene - $C(CH_3)_2NCO$ where n is a positive whole number less than 2 (i. e. 0 or 1) are particularly useful for polymer formation reactions, for example, for reaction with diamines like hexamethylene diamine, glycols like hexamethylene glycol and acids like adipic, to yield high molecular weight polymers useful for making fibres, fabrics, coatings and molded goods by conventional methods. Polyurethanes and polyureas derived from diisocyanates having OCNC $(CH_3)_2ArC(CH_3)_2NCO$ structures exhibit resistances to UV and oxidation superior to corresponding structure made from aromatic or other tertiary diisocyanates having β-methylene groups. Compounds containing an unsaturated ethylene group and an isocyanate group also, polymerize when heated with free radical catalyst like peroxide or azo initiators to produce addition polymers used for coatings. (Extracted)

Kales, R.
NEW POLYALKYLENE-POLURETHANE COPOLYMERS. [10 Feb 63] 23p
Order from OTS or SLA $2.60 63-20026

Trans. of French patent 1,294,745, appl. 18 Jan 61, delivered 24 Apr 62, by Delka Res. Corp.

DESCRIPTORS: *Polyethylene plastics, *Isocyanate plastics, Copolymerization, *Ethylenes, *Glycols, *Tolulenes, Isocyanates, Methanols, *Fillers, *Elastomers, *Plastic films, *Plastic coatings, *Adhesives.

The invention consists in principle of transesterifying an animal or vegetable drying, semi-drying or non-drying oil with addition of polyalkylenes, especially polyethylene. This transesterification is conducted in the presence of a transesterification catalyst like calcium naphthenate, etc in an inert atmosphere by heating between 200 and 500°C and preferably around 250° with stirring until transesterification is complete. The polyalkylene is completely dissolved in the mixture which is obtained. The transesterification mixture is cooled and treated slowly with an isocyanate with stirring in an inert atmosphere. Suitable solvents may be added along with the isocyanate to prevent solidification of the reaction mixture. Addition of alcohols during addition of isocyanate helps to stabilize the final product and prolong storage life. If desired, the reaction may be heated to promote polycondensation and polymerization to form oil-modified polyurethanes. The resultant reaction product is a prepolymer which may be hardened once it is applied to surfaces, simply by letting it stand, by heat, moisture or actinic light such as UV. (Extracted)

Landler, Ivan and Magat, Michel.
POLYMERIZATION OF STYRENE INDUCED BY SLOW NEUTRONS. [1963] 3p 5refs
Order from SLA $1.10 63-18983

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1948, v. 226, p. 1720-1721 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Styrene plastics, *Polymerization, *Thermal neutrons, Ethyl radicals, Bromides,

Meyerhoff, G.
MOLECULAR DIMENSIONS OF POLYMERS IN DIFFERENT SOLVENTS ON THE BASIS OF HYDRODYNAMIC MEASUREMENTS. (Molekülldimensionen von Polymeren in Verschiedenen Lösungsmitteln auf Grund Hydrodynamischer Messungen). Report from the IUPAC Symposium on Macromolecules, Wiesbaden, 1959. [1963] [22]p. (foreign text included) 19 refs.
Order from SLA $2.60 63-18354

Trans. of Ma'kromol[ekulare] Chemie (Switzerland) 1960, v. 37, no. 1/2, p. 97-107.

DESCRIPTORS: *Styrene plastics, Molecular properties, *Solvents, *Chloroform, *Toluenes, *Cyclohexanes, *Ketones, Methyl radicals, Ethyl radicals, Viscosity, Sedimentation, Diffusion, Friction, Hydrodynamics.

A fractionated polystyrene ($M_W \approx 540,000$) was investigated in chloroform, toluene, methyl ethyl ketone, cyclohexane and in three mixtures of toluene and methyl ethyl ketone. Chloroform is a good solvent, cyclohexane a Θ-solvent for polystyrene, so the dimensions of the thread-like molecule decrease on passing from chloroform to cyclohexane. The frictional properties of the polymer molecules and the limiting viscosity number of the solutions also change with the solvent. Measurements of sedimentation coefficient, diffusion coefficient, intrinsic viscosity in the different solvents and its mixtures as well as densities and viscosities of the mixed solvents are reported. The results of the measurements allow the non gaussian coil dimensions to be calculated from the theory of viscosity. It is shown that increasing solvent power diminishes the limiting diffusion number. The friction is greater, the more extended the coil. The radius of gyration of polystyrene is a unique function of the intrinsic viscosity in the different solvents. (Author)

Moritz, Helmut and Ewald, R.
CHEMICAL AND PHYSICAL QUESTIONS IN THE PRODUCTION AND WORKING OF THERMOPLASTIC PLASTIC PLATES AND FOILS. [1963] 15p (figs omitted).
Order from K-H $15.00 K-H-5309-a

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 5, p. 195-198.

DESCRIPTORS: Foils, Sheets, *Plastics, *Thermoplastics, Production

Nikitina, T. S. [Zhuravskaya, E. V., and Kuzminskii, A. S.].
EFFECT OF IONIZING RADIATION ON HIGH POLYMERS. 1963, 96p
Order from GB $4.95

Trans. of mono. [Deistvie Ioniziryushchikh Izluchenii na Polimery, Moscow, 1959, 101p].

DESCRIPTORS: *Radiation effects, *Polymers, Plastics, Degradation.

Omel'chenko, S. I., Videnina, N. G., Belaya, E. S., Linko, S. V., and Kovanko, S. K.
PREPARATION OF EPOXY RESINS BY DIRECT EPOXIDATION OF UNSATURATED POLYMERS AND THEIR USE AS FILMFORMING MATERIAL. [1963] 10p (figs omitted) 14refs
Order from OTS or SLA $1.10 63-20489

Trans. of Lakokrasochnye Materialy [i Ikh Primenenie] (USSR) 1962, no. 6, p. 15-19.

DESCRIPTORS: *Epoxy plastics, Polymers, Rubber, Acetic acids, Chemical reactions, *Plastic coatings, Films, Varnishes, Hardness, Elasticity, Fracture (Mechanics), Adhesion

The possibility was established of epoxidation of high molecular caoutchoucs of grade SKB, SMD, and SKS-30A with peracetic acid, separated in the process of reaction. There was shown the optimal conditions for epoxidation of caoutchoucs of all three grades: mixing temperature of initial components and exposure 55-60°C 55-60°C, duration of reaction 2-3 hours; quantity of epoxidation agents, arriving at one olefin equivalent, - from 0.5 to 0.8 mole glacial acetic acid and, correspondingly, from 1.0 to 1.6 moles 50-60% hydrogen peroxide. It was shown that as a result of the epoxidation of caoutchouc under optimal conditions there is obtained epoxy resin containing epoxy (16-34%) hydroxyl and acetyl groups. Furthermore, they preserve to a considerable extent their unsaturability. There was investigated the film-forming capacity of products of epoxidated caoutchoucs. It was shown that all the epoxidated caoutchoucs form films, having good adhesion to metal, considerable impact strength and high elasticity; lacquer films based on ESKD resin and ESKB resin are also distinguished by good hardness. (Author)

Orthmann, H. J.
DETERMINATION OF THE MELT VISCOSITY OF POLYETHYLENE WITH A PENETROMETER. [1963] 10p
Order from ATS $11.50 ATS-06Q72G

Trans. of Kunststoffe (West Germany) 1952, v. 52, no. 1, p. 15-18.

DESCRIPTORS: *Polyethylene plastics, Melting, Viscosity, Chemical analysis, Penetration.

Rotrekl, B.
THE SORPTION PROCESS FOR METALLISING PLASTICS. Sep 63.
Order from TTIS $18.00 TTIS NS 133

Trans. of Plaste und Kautschuk (East Germany) 1963, v. 10 [no. 6] p. 373-376.

DESCRIPTORS: *Plastics, *Metalorganic plastics, Processing, Sorption

Sazhin, B. I. and Eidelnant, M. P.
[STUDIES] OF ELECTROCONDUCTIVITY OF POLYMERS. V. POLYCARBONATE, POLYETHYLENETERPHTHALATE, MIXED POLYESTER AND POLYOXYMETHYLENE. [1963] 19p. 21 refs.
Order from OTS or SLA $1.60 63-18740

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1962, v. 4, no. 4, p. 583-590.

DESCRIPTORS: Polymers, *Electrical conductance, *Polyester plastics, *Acetal plastics, *Carbonates, *Ethylenes, Glycols, *Phthalates, *Sebacic acid, Formaldehyde, Temperature, Loading (Mechanics), Polarization, Crystallization.

The results are described of the experimental determination of the resistivity of polycarbonate, polyethyleneterephthalate, mixed polyester of terephthalic and sebacic acids with ethylene glycol and polyoxymethylene, depending upon the temperature (-180 to 200°C) and the duration of loading of the specimen (0.01 to 1200 sec.). It is shown that for $T < Tg$ the value of ρ_v is greatly dependent upon the establishment of dipole-radical polarization. The crystallization of the first two polymers is accompanied by a considerable increase in ρ_v. (Author) (See also 63-15833)

Schmitt, Werner, Purrmann, Robert, and Jochum, Peter.
USE OF CROSSLINKABLE ORGANIC POLYETHYLENIMINE COMPOUNDS FOR THE PRODUCTION OF SELF-HARDENING COMPOSITIONS FOR FILLING DENTAL CAVITIES AND FOR ANCHORING TOOTH SUBSTITUTES. [1963] 6p 10refs
Order from OTS or SLA $1.10 63-20335

Trans. of German patent (Auslegeschrift) 1,146,617, by Espe Fabrik Pharmazeutischer Praparate Gesellschaft mit Beschrankter Haftung, appl. 6 Jun 58, pub. of the appl. and issuance of the Auslegeschrift 4 Apr 63.

DESCRIPTORS: *Thermosetting plastics, Polymers, *Ethylenimines, *Dentistry.

Schofield, Philip John.
FLEXIBLE CONTAINERS FOR LIQUID FUELS AND PROPELLANTS. [1963] 4p 14refs
Order from OTS or SLA $1.10 63-20337

Trans. of German patent (Auslegeschrift) 1,146,447, by Imperial Chemical Industries Ltd., appl. 16 Nov 56, pub. of the appl. and issuance of the Auslegeschrift 28 Mar 63.

DESCRIPTORS: *Containers, *Fuels, Liquids, *Textiles, *Polyamide plastics, *Synthetic rubber.

The invention concerns a flexible container for liquid fuels and propellants, consisting of fuel impermeable materials and textile fabrics, whereby the main blocking layer consists of a polyamide layer which is combined with a layer of fuel resistant rubbery material. These containers are characterized in that this rubbery material is reinforced by an outer layer of tightly woven or tightly knitted textile material and the polyamide layer is combined with an inner reinforcing layer of loosely woven or loosely knitted textile material, whereby the threads of the reinforcing layers are impregnated with a fuel resistant rubbery material. The layer coming in contact with the fuel consists of an alkoxy alkyl polyamice, particularly of N-methoxymethyl polyhexamethylene adipamide. The reinforcing layers consist of fibers of a synthetic linear polyamide

or an aromatic polyester, as polyethylene terephthalate. The outer reinforcing layer is joined to the rubbery intermediate layer with the help of a polyisocyanate bonding agent. (Author)

Sharaev, O. K., Topchieva, K. V. and others.
THE NATURE OF INDUCTION PERIOD IN ETHYLENE POLYMERIZATION ON CHROMIA CATALYST. [1963] 2p. 1 ref.
Order from OTS or SLA $1.10 63-18848

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 2] p. 187-188.

DESCRIPTORS: *Polyethylene plastics, *Ethylenes, Polymerization, *Chromium catalysts, Solvents, *Octanes.

Experimental results of chromia catalyst treatment by isooctane confirmed that formation of the catalytic activity occurs during the induction period because of a reduction of the hexavalent chromium catalyst under the action of reagent- the ethylene. (Author)

Staudinger, H. and Heuer, W.
CONNECTIONS BETWEEN SOLVATION, SOLUBILITY, AND VISCOSITY OF POLYSTYRENES. II. VISCOSITY MEASUREMENTS. Communication 101 of High-Molecular Compounds. [1963] [49p] (figs omitted) 50refs
Order from SLA $4.60 63-18972

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig]. (Germany) 1934, v. 171A, Nov/Dec, p. 147-180.

DESCRIPTORS: *Styrene plastics, Solubility, Viscosity, Chemical precipitation, Molecular weight, *Solvents, *Malonic esters, *Benzenes, *Ketones, *Colloids.

Takashima, N[aoichi] Tanaka, S[anae] and others.
PURIFIED AND STABILIZED POLYOLEFINS. [1963] 4p.
Order from ATS $6.50 ATS-71Q71J

Trans. of [published] Japanese patent 10567/1962 [cl. 25-H-311 (25-H-05) (25-N-13)] appl. no. 22,118 (1960) filed 26 Apr 60, pub. 8 Aug 62, applicant Mitsubishi Yuka (Oil Chemistry) Co., Ltd. Another trans. is available from SA $16.00 as SA Code-P-122, July 63, 7p.

DESCRIPTORS: *Polyethylene plastics, Stability, Purification.

Uberreiter, K. and Orthmann, H.-J
VISCOSITY AND FLOW MECHANISM OF FUSED HOMOLOGOUS POLYETHYLENES. PT. II of Study on Polyethylenes. [1963] 26p 26refs
Order from SLA $2.60 63-18981

Trans. of Kollodi-Zeitschrift [und Zeitschrift für Polymere] (West Germany) 1952, v. 126, no. 2/3, p. 140-149.

DESCRIPTORS: *Polyethylene plastics, Viscosity, Fused materials, Molecular properties, Theory.

The temperature dependence of the viscosity of some fused polyethylenes of increasing chain length was determined. The results make it possible to draw conclusions concerning the migration mechanism in the fused phase. In this connection, it was found that the heretofore accepted concept of the flow process of a molecule as a segment-wise flow of a coiled chain must be replaced by another image, which is in better consonance with the experiments. (Author)

Wurstlin, F. and Klein, H.
THE EFFECTIVENESS OF SOFTENERS IN CONNECTION WITH THE CHEMICAL CONSTITUTION OF SOFTNESS. [1963] 17p (figs omitted).
Order from K-H $17.00 K-H-5309-g

Trans. of [Kolloid-Zeitschrift und Zeitschrift für Polymere] (West Germany) 1952, v. 128, p. 136-142.

DESCRIPTORS: *Plasticizers, Polymers, *Plastics, Chemical industry,

Zohrer, K. and Merz, A.
CONTRIBUTION TO THE PROBLEM OF SOFTENER MIGRATION. [1963] 17p
Order from K-H $17.00 K-H-5309-d

Trans. of Kunststoffe (West Germany) 1955, v. 45, no. 1, p. 9-12.

DESCRIPTORS: *Plasticizers, Polymers, *Plastics,

Rubber and Elastomers

Bogdanova, O. K., Shcheglova, A. P., and Balandin, A. A.
THE CATALYTIC DEHYDROGENATION OF INDIVIDUAL ISOPENTENES INTO ISOPRENE. [1963] [7]p. 11 refs
Order from OTS or SLA $1.10 63-18843

Trans. of Neftekhimiya (USSR) 1962, v. 2 [no. 4] p. 442-447.

DESCRIPTORS: *Isoprene, *Pentenes, *Dehydrogenation, Catalysts, Catalysis, *Reaction kinetics, Temperature, Oxides,

Catalytic dehydrogenation kinetics of isopentene isomers to isoprene was studied on an oxide catalyst 560-600 C and a passage rate of .5 hour^{-1}, with steam dilution in wt. ratio 1:3. 2,3. Reaction rate constants were determined and also the tendency for double bond isomerization. Isoprene yields were 25-41% to the passed, and 82-91% to the reacted isopentenes, at 580-620 C, a space velocity of 4.5-5.5 liters/liter catalyst/hour and at a dilution with steam in the weight ratio of 1:2.5-3. (Author)

Kimmer, W. and Schmalz, E. O.
A CONTRIBUTION TO THE INFRARED SPECTROSCOPIC ANALYSIS OF RUBBER. 15 Jul 63 [20p] 7refs
Order from SLA $1.60 63-20243

Trans. of Zeitschrift für Analytische Chemie (West Germany) 1959, v. 170, p. 132-147.

DESCRIPTORS: *Rubber, *Synthetic rubber, *Butadienes, Molecular isomerism, *Infrared spectroscopy.

In order to be independent of the use of standard substances, especially in the quantitative analysis of rubber isomers, a method was developed with which it is possible to determine quantitatively the 1,2-, 1,4-cis- and 1,4-trans- isomers in rubber without the hitherto customary use of olefins as standard substances. By this method, dilution series are prepared from three rubber samples, fictitious extinction coefficients extrapolated to c = 0 are determined from the IR spectra of the dilution samples by the use of a modified base-line method, and by mathematical combination of the thus obtained extinction coefficients with the aid of determinants, the actual extinction coefficients, i.e., the extinction coefficients of the pure isomers or the mole percent of the isomers in the individual samples are calculated. The method described in addition to being used for rubber analysis, can be used for the quantitative determination of other mixtures without determining the extinction coefficients of the pure components beforehand. (Author)

Leblanc, Fernand.
TIRE, tr. by P. C. C. 23 Jul 63, 4p (figs omitted).
Order from OTS or SLA $1.10 63-23563

Trans. of French patent 736,231, gr. 10, cl. 1, filed 10 Aug 31, granted 12 Sep 32, pub. 21 Nov 32.

DESCRIPTORS: *Tires, Vehicles, *Rubber, Vulcanizates, *Textiles, Bonding.

Patat, F. and Kollinsky, F.
ABOUT THE POLYMERIZATION OF PHOSPHOR NITRIL CHLORIDE. [1963] [43p] (figs omitted) 8refs
Order from SLA $4.60 63-18978

Trans. of Makromolekular Chemie (Switzerland) 1951, v. 6, p. 292-317.

DESCRIPTORS: *Elastomers, *Phosphonitrile chlorides, *Polymerization, Reaction kinetics, Molecular weight, Oxygen, *Block polymers.

A description is given of the polymerization of phosphor nitril chloride, pure and in various solvents at temperatures around 300°C. This polymerization can easily be presented by the simple scheme of start- chain- discontinuance. The activation energy is found to be at 40 kilogram calories. The experimentally found constant for polymerization in carbon tetrachloride is $k_{II}' \sim 4.10^{14} \cdot 10^{\frac{-40000}{2,2RT}}$. In contrast to polymerization at 600°C the polymerization at low temperatures does not come to an equilibrium. Oxygen is essential for the course of the reaction as it enters into the process at the beginning and the end. As far as the polymers are soluble they show molecular weights up to 130,000 and appear in good solvents as balls which are slightly rinsed through. The kinetic length of the chain has been found to be as much as a thousand times greater than the experimentally determined polymerization degrees. (Author)

Turov, B. S., Vinogradov, P. A. and others.
EFFECT OF ETHERS ON THE CHAIN STRUCTURE DURING STEREOSPECIFIC BUTADIENE POLYMERIZATION. [1963] [2]p. 15 refs.
Order from OTS or SLA $1.10 63-18836

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1962, v. 146 [no. 5] p. 1141-1142.

DESCRIPTORS: *Elastomers, *Butadienes, Polymerization, *Stereochemistry, Molecular structure, *Ziegler catalysts, Impurities, *Ethers.

Wood and Paper

METHOD OF PRODUCING FOIL-PAPER LAMINATES. Sep 63.
Order from TTIS $10.00 TTIS NS 139

Trans. of Polish patent 46,822, by Cracov Cable Works, appl. 12 Dec 60, pub. 20 Apr 63.

DESCRIPTORS: *Laminates, *Foils, Metal films, Copper, *Paper, Impregnation, Phenols

[PROCESS FOR OBTAINING SEMI-CHEMICAL CELLULOSE AND ITS DERIVATIVES]. [1963] 6p.
Order from OTS or SLA $1.10 63-18807

Trans. of Italian patent 460,196, by Azienda Brevetti Industriali (A. B. I.) filed 1 Oct 49, granted 19 Oct 50. Also available from OTS or SLA $1.10 as 63-23184 [1963] 6p.

DESCRIPTORS: *Fibers (Natural), *Lignin, *Plants (Botany), Heat treatment, Sodium, Calcium, Magnesium, Ammonia, Sulfur compounds, Dioxides, *Paper, *Pressboard.

The invention involves a process for obtaining semi-chemical cellulose and its derivatives, such as paper, cardboard and other articles, by submitting to one and the same treatment simultaneously ligneous vegetable parts and cortical fibres, for inst. integral hemp and flax stalks, and the products obtained by this process. (Author)

Aaltio, Erkki, A.
THE EFFECT OF HIGHLY BEATEN BIRCH PULP FRACTION ON THE PROPERTIES OF KRAFT PAPER. [1963] [8]p. 4 refs.
Order from SLA $1.10 63-18814

Trans. of Paperi ja Puu (Finland) 1962 [v. 44] no. 4a, p. 217-222.
Another trans. is available from SLA $1.10 as 63-10490 [1962] 6p.

DESCRIPTORS: *Wood pulp, *Paper, Adhesives, Sulfites, Chemical bonds, Cellulose, Mechanical properties, Sulfate pulp.

The study indicates that when hard, hemicellulose-rich birch sulphite pulp, beaten to slime is added to normal 10-15% pine sulphate pulp, the strength characteristics of the main stock improve considerably This means that the beating of the main stock can be reduced correspondingly and a great saving of beating energy can be realised. The fraction added acts as an interfibre glue. This is due to its large specific surface as well as by its high hemicellulose content. The higher the hemi'content of the birch pulp, the less needs to be added to the main stock to reach the optimum effect. So it is probable that a neutral sulphite birch pulp would be suitable since it has a high content of hemicellulose. When beating birch slime it is advantageous to apply principles similar to those used in the manufacture of glassine paper. The beating must have a strong slime producing action on the pulp it must grind the fibres as well as fibrillate them. This maximizes the fibre length. (Author)

Colombo, P., Corbetta, D., Pirotta, A., and Ruffini, G.
TWO STAGE COOKING OF CONIFEROUS WOOD. II. BEATING OF LABORATORY PULP. [1963] [29p] 4refs
Order from SLA $2.60 63-18789

Trans. of Association Technique de l'Indutrie Papetiere. Bulletin (France) 1962, no. 16, p. 370-386.

DESCRIPTORS: *Wood pulp, Processing, Black liquor, Mechanical properties, Sulfites, Bleaching.

The paper is concerned with the beating of the bleached and unbleached pulps produced by cooks on 15 kgs of wood. The bleaching of all the pulps was done in three stages: chlorine - alkali wash - calcium hypochlorite to a brightness of 70% (Photovolt). The total chlorine was calculated from the lignin content. This bleaching sequence could not be used for the two stage cooks sulphite-monosulphite (straight or with alkali). The physical properties of the bleached pulps from the pulps at 55-56% yield were ranked as follows: sulphite-kraft, monosulphite, sulphite-monosulphite, sulphite, sulphite-alkaline monosulphite. For the pulps from the 50-52% yield pulp the ranking was: sulphite-kraft, monosulphite, sulphite. Among the two stage pulps, sulphite and monosulphite gave pulp with the best physical properties for unbleached pulps of 52% yield and bleached pulps of 56% yield. Two stage sulphite-kraft pulps gave reasonably high properties but with too slow a drainage rate for practical use. With two stage sulphite-alkaline monosulphite the same results as in the previous work were not obtained probably because of the different method of alkalization used in the second stage of the cook. (Author) (See also 62-16211)

Engelhardt, G.
PHYSICAL-CHEMICAL PROBLEMS IN BISULPHITE ACIDS. [1963] [16]p. 1 ref.
Order from SLA $1.60 63-18920

Trans. of Zellstoff u[nd] Papier (East Germany) 1962, v. 11, no. 2, p. 43-50.

DESCRIPTORS: *Paper industry, *Wood pulp, Processing, *Towers (Chemistry), Limestone, *Sulfur compounds, Dioxides, Calcium compounds, Oxides, Sodium compounds, *Sulfites, *Acids,

Consideration is given to the methods for the preparation of bisulfite acid which consists of a sulfite pulp mill with an acid tower in whose interior, loaded with limestone, a solution rich in base content is manufactured with the aid of rising SO_2 gas. In order to produce a cooking acid of higher SO_2 content, vapor pressure of the tower acid is used. The discussion involves (1) the equilibrium between SO_2 gas and water; (2) the height half-value of the acid tower; (3) the interaction between aqueous SO_2 solution and limestone; (4) changes due to tower operation with mixed Ca-Na base; (5) the 3 phase equilibrium in the ready tower acid; (6) the tower acid equilibrium from the point of view of incipient $CaSO_3$ precipitation; (7) some estimates concerning the conditions leading to the precipitation of $CaSO_3$; and (8) ways of increasing the thermal stability of cooking acids with higher CaO content.

Mahdalik, M.
HARMFUL PITCH IN PULP. [1963] [7]p. 3 refs.
Order from SLA $1.10 63-18811

Trans. of Svensk Pappers-tidning, 1963, v. 66, no. 3, p. 51-54.

DESCRIPTORS: *Pitch (Material), Flotation (Separation), *Wood pulp.

A test method was developed, based on the principle of pulp flotation in aqueous medium, which may be used to determine the amount of pitch separated from wood fibers. The total amount separated is considered harmful, since it is not known whether the emulsified portion will deposit on parts of the mechanical equipment which are continuously in contact with pulp suspension. Fresh softwood pitch showed an increased tendency to form deposits due to its greater plasticity caused by terpenes which play the role of plastifiers. Pulps made from seasoned wood (12 to 24 months) encountered no pitch trouble.

Noll, August.
THE BEHAVIOR OF BITUMENS AND SOFT PITCH DURING HEATING. 29 Apr 52 [8p]
Order from SLA $1.10 63-20632

Trans. of Wochenblatt fllr Papierfabrikation (West Germany) 1948, v. 76, no. 5, p. 108-110.

DESCRIPTORS: *Bitumens, *Pitch (Material), Heating, *Paper industry, Coatings.

Ploetz, T. and Hohenschutz, H.
APPLICATION OF SODIUM ALUMINATE IN PAPER MANUFACTURE. III. EFFECTS OF THE SYSTEM ALUM-SODIUM ALUMINATE ON INITIAL WET STRENGTH. 21963] 4p 3refs
Order from SLA $1.10 63-18775

Trans. of das Papier (West Germany) 1956, v. 10, p. 406-409.

DESCRIPTORS: *Papers, *Wood pulp, Preparation, Additives, *Aluminum compounds, Ammonium compounds, Sulfates, *Sodium compounds, *Aluminates, Tensile properties.

A 3% consistancy alum-sodium alumina te mixture was added to a pulp of 70% pine groundwood and 30% unbleached pine sulfite kraft. The aluminum hydroxide gels thus formed in the fiber slurry resulted in significant increases in initial wet strength properties. The products obtained by various modifications of the method of preparing such pulps are compared.

Wolf, Sebastian.
PROCESS FOR THE PRODUCTION OF LOOSE AND SOFT VEGETABLE FIBRES. [1963] 3p
Order from OTS or SLA $1.10 63-20206

Trans. of German patent 63,180 [1891].

DESCRIPTORS: *Fibers (Natural), Textiles, *Cellulose, Physical properties, Solvents, *Pressboard,

MATHEMATICS

SOVIET MATHEMATICS, 1962, VOL. 3, NO. 6, P. 1523-1816. Nov 62, 1v
Order from AMS $5.00, $17.50/year

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 147, no. 1 no. 1, p. 11-56; no. 2, p. 271-330; no. 3, p. 519-561; no. 4, p. 751-808; no. 5, p. 999-1044; no. 6, p. 1271-1299; and author index v. 142-147.
Other translations of pl 751-754 and 776-778 are available from OTS or SLA $1.10 ea. as 63-18065 [8p] and 63-14414 [7p].

DESCRIPTORS: *Mathematics, Periodicals.

SOVIET MATHEMATICS, 1963, VOL. 4, NO. 3, P. 561-882. Jun 63, 1v
Order from AMS $5.00, $17.50/year

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 150, no. 1, p. 9-61; no. 2, p. 231-274; no. 3, p. 455-498; no. 4, p. 711-754; no. 5, p. 959-1011; no. 6, p. 1191-1241.
Another trans. of p. 21-22 is available from OTS $0.50 as 63-31456, JPRS-20501, 6 Aug 63, 4p.

DESCRIPTORS: *Mathematics, Periodicals.

Aczel, J.
LECTURES ON FUNCTIONAL EQUATIONS AND THEIR APPLICATIONS. 1963, 350p
Order from Scripta Technica, Inc., 1000 Vermont Ave., Washington, 5, D. C.

Trans. of unidentified German language mono., n.p., n.d.

DESCRIPTORS: *Equations, Functions, Integral equations, Differential equations.

Bradis, V. M., Minkovskii, V. L., and Kharcheva, A. K.
LAPSES IN MATHEMATICAL REASONING [2D ED]. 1963, 206p
Order from PP $2.95

Trans. of mono. [Oshibki v Matematicheskikh Rassuzhdeniyakh, 2d ed, Moscow, 1959, 175p].

DESCRIPTORS: *Mathematics, *Reasoning, Algebra, Geometry, Trigonometry, Numerical analysis,

Cheng, Shao-lien [Wu, Li-te, and T'ao, Tsung-ying].
PROBABILITY AND MATHEMATICAL STATISTICS. 3 Sep 63 [43p] 1ref FTD-TT-63-472.
Order from OTS or SLA $4.60 63-24039

Unedited rough draft trans. of mono. Ko Hsuek Chi Shu Ch'u Pan She, Shanghai, 1961, p. 315-344.

DESCRIPTORS: *Probability, *Applied mathematics, Sampling, Statistical distributions, Statistical functions.

Topics include: sampling examination method, general discussion of the problem, single sampling examination, multiple sampling examination, sequential sampling, and distribution of extreme values, general discussion of the problem, three types of largest item approximate distribution, sequential statistical quantity distribution and smallest item approximate distribution, and estimating approximate distribution.

Gurin, L. S. and Lobach, V. P.
COMBINATION OF THE MONTE CARLO AND STEEPEST DESCENT METHODS FOR SOLVING SOME EXTREMAL PROBLEMS. [8 May 63] [9]p.
1 ref. 5 add. refs.
Order from OTS or SLA $1.10 63-18370

Trans. of Z[hurnal] Vychisl[itel'noi] Mat[ematiki] i Mat[ematicheskoi] Fiziki (USSR) 1962, v. 2, no. 3, p. 499-502.
An unedited rough draft trans. is available from OTS or SLA $1.10 as 63-23425, FTD-TT-63-231, 24 May 63 [8]p.

DESCRIPTORS: *Monte Carlo method, Algorithms, Programming (Computers), Functions, *Numerical methods and procedures, *Complex variables, Calculus of variations,

Hirschmann, Joachim.
CURVE-TRACING LINEAL CONSISTING OF A NUMBER OF ADJACENT, ADJUSTABLE BARS. [1962] 2p. (figs. omitted).
Order from OTS or SLA $1.10 62-18458

Trans. of German patent 186,469, 17 May 06.

DESCRIPTORS: *Tools (Mathematical), Design, Operation,

The invention covers a "lineal" for tracing curves, so designed that it can be used to trace the most diverse types of curves. The adjustment is effected by means of adjacent bars which can be fixed in a certain position, the ends of which can be set to conform to the outline of any curve, without a special guide member to serve as a guide for the drawing pen.

Keldysh, M. V.
ON THE GALERKIN METHOD FOR SOLVING BOUNDARY PROBLEMS. [1963] 42p.
Order from OTS or SLA $4.60 63-20329

Trans. of Akademiya Nauk SSSR. Izvestiya. Ser[iya] Mat[ematicheskaya] 1942, v. 6, p. 309-330.

DESCRIPTORS: *Boundary value problems, *Differential equations, *Numerical methods and procedures, Fourier analysis, Series.

The proof of the convergence of the Galerkin method is given for certain classes of linear differential equations. (Author)

Khinchin, A. Ya.
CONTINUED FRACTIONS 3D ED. 1963, 115p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Tsepne Drobi, 3d ed., Moscow, 111p].

DESCRIPTORS: *Continued fractions, Measure theory.

Koshlyakov, N. S. [Gliner, E. B., and Smirnov, M. M. M.].
DIFFERENTIAL EQUATIONS OF MATHEMATICAL PHYSICS. 1963, 800p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Osnovnye Differentyal'nye Uravneniya Mathematicheskoi Fiziki, Moscow, 1962, 767p].

DESCRIPTORS: *Differential equations, Physics, *Applied mathematics.

Pervozvanskii, A. A.
RANDOM PROCESSES IN NONLINEAR AUTOMATIC SYSTEMS. 1963, 375p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono. [Moscow, 1962, 351p].

DESCRIPTORS: Automatic, *Nonlinear systems, Synthesis, *Statistical processes, Control systems, *Automation.

Rivkind, Ya. I.
PROBLEMS IN MATHEMATICAL ANALYSIS. 1963, 100p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n.p., n.d.

DESCRIPTORS: *Mathematical analysis, Functions, Sequences, Integrals, Series.

Shreider, Yu. A.
METHOD OF STATISTICAL TESTING: THE MONTE CARLO METHOD. 1963, 332p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Metod Statisticheskogo Ispytaniya, Moscow, 1962, 331p].

DESCRIPTORS: *Applied mathematics, *Statistical tests, *Monte Carlo method.

Skorokhod, A. V.
STUDIES IN THE THEORY OF RANDOM PROCESSES. 1963, 250p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Issledovaniya po Teorii Sluchainykh Protsessov; Stokhasticheskie Differentsial'nye Uravneniya i Predel'nye Teoremy dlya Protsessov Markova, Kiev, 1961, 216p].

DESCRIPTORS: *Statistical processes, Theory, Stochastic processes, *Probability, *Differential equations, Integrals, Applied mathematics.

Takahashi, Toshie.
MATHEMATICS OF AUTOMATIC CONTROL. 1963, 415p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Japanese mono., n.p., n.d.

DESCRIPTORS: *Mathematics, Automatic, *Control theory, Functional analysis, *Automation.

Volosov, V. M.
THE AVERAGING IN SYSTEMS OF ORDINARY DIFFERENTIAL EQUATIONS. [1963] 162p 51refs
Order from OTS or SLA $12.00 63-20296

Trans. of Uspekhi Matematicheskikh Nauk (USSR) 1962, v. 17, no. 6(108) p. 3-126.

DESCRIPTORS: *Differential equations, Oscillation, Nonlinear systems, *Numerical methods and procedures, Applied mechanics, Mathematics, Theory.

The present article is dedicated to the review of the averaging method, widely applied in the investigation of oscillating processes, described by ordinary differential equations. Presented are the formal schemes of the averaging method. Here the well known investigations of N. N. Bogolyubov and of other authors are outlined, connected with the development of the asymptotic methods, where the averaging is applied. Questions on the proofs of the averaging method are discussed, the theorems on averaging are stated, and the general ideas are given for the proof of similar theorems. Problems connected with the application of averaging to the study of the process of nonlinear oscillations are outlined. A number of concrete examples, appearing in physics and techniques, and systems of a particular form with the solution of the problem on the computation of higher asymptotic approximations of the averaging method are presented. Also discussed are the calculations regarding the computation of the phase of the oscillating processes, as well as the periodic solutions are computed for certain self-oscillating systems. (Author)

Computing Devices

Goron, I. E., Arutyunov, M. G., Markovich, V. D., Patrunov, V. G., and Traubenberg, V. P.
THE HIGH-SPEED MAGNETOGRAPHIC RECORDING OF DIGITAL DATA. [1963] [8p] 8refs [DSIR] NLL M. 10111.
Order from OTS or SLA $1.10 53-23514

Trans. of #Elektrosvyaz' (USSR) 1962, v. 16, no. 12, p. 26-32.

DESCRIPTORS: *Magnetic recording systems, *Digital recording systems, Printing, Design, Operation.

The paper discusses the principles of construction and the basic characteristics of systems for the magnetographic recording of digital data on ordinary types of paper at recording speeds of 100 lines/min and abov The article describes the general construction and characteristic sub-assemblies of the FAZA-1. (Author)

Maiorov, F. V.
DIGITAL DIFFERENTIAL ANALYZERS. 1963, 430p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, D. C.

Trans. of mono. [Tsifrovye Integriruyushchie Mashiny, Moscow, 1962, 408p].

DESCRIPTORS: *Digital differential analyzers, Data storage systems, Computers, Operation, Design.

Shlezinger, M. I.
EXPERIMENTS ON SIMULATION OF THE "ALPHA" SYSTEM WITH POSITIVE FEEDBACK LOOP. 9 Oct 63, 11p 4refs JPRS: 21376.
Order from OTS $0.50 63-31903

Trans. of Avtomatyka (USSR) 1963 [v. 8] no. 2, p. 82-88.

DESCRIPTORS: *Pattern recognition, Images, *Cybernetics, Feedback, Circuits, Computers, Programming (Computers), Simulation,

A study is made of the structural scheme of a cybernetic system with a positive feedback loop that is used for the spontaneous recognition of several images Equations of systems with the first and sixth feedback loops and the system simulation program are also discussed.

Smirnov, N. A., Smolov, V. B., Fomichev, V. S. and Chernyavskii, E. A.
A DECODING "DIGIT-TO-ANGLE" CONVERTER WITH INTERMEDIATE CONVERSION. 23 Oct 63, 15p 2refs JPRS: 21553.
Order from OTS $0.50 63-31989

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Elektromekhanika (USSR) 1963 [v. 6] no. 5, p. 597-604.

DESCRIPTORS: *Digital-to-analog converters, *Computer systems components, Input-output devices, Circuits, Design, Coding.

Topics include a description of a linear digital converter of the compensation type; and a description of the circuitry of the N→φ linear converter.

MECHANICS

SOVIET ABSTRACTS: MECHANICS, 1962, NO. 8, ABSTRACTS 8A57-8V554. [1963] [28p]
Order from OTS or SLA $2.60 63-24108

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1962, no. 8.
A partial trans. (titles only) is available from OTS or SLA $6.60 as 63-19221 [1962] [61p].

DESCRIPTORS: *Abstracts, *Mechanics, Celestial mechanics, *Fluid mechanics, *Hydrodynamics, Aerodynamics, Viscosity, *Boundary layer, *Heat transfer, Diffusion, *Elasticity, *Plasticity, Structural parts, Mechanical properties.

Abramovich, G. N.
THEORY OF TURBULENT JETS. 1963, 750p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Teoriya Turbulentnykh Strui, Moscow, 1960, 715p].
Another trans. is available from OTS or SLA $31.00 as 62-32675, MCL-1256, 3 Aug 62 [792p.].

DESCRIPTORS: *Turbulence, *Jets, Gas flow, Fluid flow.

Bagdoev, A. G.
DETERMINATION OF PRESSURE IN A HETEROGENEOUS ELASTIC HALF-SPACE. [1963] 4p. 1 ref.
Order from OTS or SLA $1.10 63-18754

Trans. of Akademiya Nauk Armyanskoi SSR, Erivan. Izvestiya. Seriya Fiziko-Matematicheskikh Nauk, 1960, v. 13, no. 2, p. 105-108.

DESCRIPTORS: *Elasticity, *Pressure, Stresses, Tensor analysis.

Duda, Theodor.
FLYWHEEL FOR GYROSCOPES. 1 Aug 63 [5]p. FTD-TT-63-601.
Order from OTS or SLA $1.10 63-23716

Unedited rough draft trans. of Czechoslovakian patent 93741, cl. 42c, 25/51, 15 Jan 60.

DESCRIPTORS: *Gyroscopes, *Flywheels, Mercury, Rings, Design, Operation.

The invention concerns a flywheel for a gyroscope, in which rotating mercury rings are used, characterized by the fact, that the mercury is placed in a helical slot (path) and forms an anchor of a stationary asynchronous motor, is surrounded by its stator and its channels at the upper and lower necks of the helical slot connected by means of tangentially arranged channels with mercury ring, together surrounding the stator of the motor. (Author)

Galyullin, A. S.
ON THE STABILITY OF MOTION OF A HEAVY POINT OF VARIABLE MASS. 19 Sep 63 [23p] 5refs FTD-TT-62-1188.
Order from OTS or SLA $2.60 63-24037

Unedited rough draft trans. of Aviatsionnyi Institut, Kazan. Trudy (USSR) 1959, v. 45, p. 45-62.

DESCRIPTORS: *Motion, Stability, Solids, Trajectories, Equations of motion, Mechanics, Mass-energy relation,

Established are certain stability conditions of programmed movement of a heavy point of variable mass in vertical plane in case, when the active force of the medium is directed along the tangent to the trajectory. (Author)

Hamm, Bruno and Kehrmann, Otto.
THE DESIGN AND EVALUATION OF HIGH-STRENGTH BOLTED STEEL-JOINTS (H-V JOINTS). [1958] 10p. 10 refs.
Order from SLA $1.10 61-16234

Trans. of Industrie Anzeiger (West Germany) 1957, v. 79, no. 5, p. 21-23.

DESCRIPTORS: *Bolted joints, *Steel, Design, Specifications, Stresses, Friction, Mechanical properties, Structural parts, Loading (Mechanics)

Klimov, V. S.
METHOD OF MEASURING ACCELERATIONS. 24 July 63 [4]p. FTD-TT-63-599.
Order from OTS or SLA $1.10 63-23783

Unedited rough draft trans. of Russian patent 152,133, appl. no. 750402/26-10, 2 Nov 61.

DESCRIPTORS: *Acceleration, *Measuring devices (Electrical and electronic), Design, Operation, *Accelerometers, Radioactivity, Sources.

In the proposed method, to measure all three components of the acceleration vector, on the internal surface of a hollow sphere are situated two semispherical conductive layers, between which a variable voltage is applied, and in the center of the sphere is placed a radioactive sensitive element-source of radioactive radiation and electric charge, which is held in suspended state by means of an electric field. The body of the sphere is made of insulation material and rigidly bound with radioactive radiation receivers, which are placed outside of the sphere, symmetrically with respect to the center. (Author)

Lebedev, A. A.
ON THE PROBLEM OF STABILITY OF MOTION IN A FINITE TIME INTERVAL. [1963] 32p 6refs
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R20. When supply is exhausted, order from OTS or SLA $3.60
63-20238

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1954, v. 18, p. 75-94.

DESCRIPTORS: *Perturbation theory, *Stability, *Motion, Equations of motion, Differential equations.

The method given by G. V. Kamenko is utilized to define, with respect to equations of the first approximation, conditions of stability of transient motion for finite initial, and finite, constantly acting perturbations. In this connection a method is given for determining the time interval in which unperturbed motion is stable. (Author)

Matrosov, V. M.
ON THE THEORY OF THE STABILITY OF MOTION. [1963] 18p 15refs
Order from OTS or SLA $1.60 63-20287

Trans. of #Prikladnaya Matematika i Mekhanika (USSR) 1962, v. 26, no. 6, p. 992-1002.

DESCRIPTORS: *Motion, *Stability, *Mechanics, Equations of motion, *Inequalities, Functions, Mathematical analysis.

In this paper an attempt is made to obtain criteria for the stability of motion using simultaneously several V functions. Further, each V function can satisfy less rigid requirements than the requirements in the corresponding theorem of Liapunov's second method with one function. This promises that the use of several V functions might lead to a more flexible apparatus. (Author)

Petrov, A. I.
CONDITIONS FOR COMPLETE PHYSICAL SIMILARITY OF INCOMPRESSIBLE LIQUID FLOWS IN ROTAMETERS (FLOAT-TYPE FLOW METERS) AND METHODS OF CALIBRATING ROTAMETERS. [1963] 7p (figs omitted) 1ref
Order from OTS or SLA $1.10 63-20293

Trans. of an unidentified Russian article, n. p., 1953.

DESCRIPTORS: *Flowmeters, *Calibration, Fluid flow, *Incompressible flow.

Pinkert, Curt.
FOIL FOR SUPPORTING SURFACES AND PROPELLERS FOR AIR AND WATER, tr. by J. S. 29 Aug 63, 2p (fig omitted)
Order from OTS or SLA $1.10 63-24119

Trans. of German patent 368,721, cl. 77h, gr. 6, pat. from 24 Sep 16, pub. 9 Feb 23.

DESCRIPTORS: Hydrofoils, Airfoils, *Propellers (Marine), *Propellers (Aerial), Design.

Sedov, L. I.
INTRODUCTION TO THE MECHANICS OF A CONTINUOUS MEDIUM. 1963, 300p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Vvedenie v Mekhaniku Sploshnoi Sredy, Moscow, 1962, 284p].

DESCRIPTORS: *Continuum mechanics, *Tensor analysis, Deformation, Models (Simulations).

Zhurkov, S. N. and Sanfirova, T. P.
TEMPERATURE-TIME DEPENDENCE OF THE STRENGTH OF PURE METALS. [1963] 9p 19refs
Free copies available from Boeing Scientific Research Labs. Library as Boeing Trans. R78. When supply is exhausted, Order from OTS or SLA $1.10 63-20241

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 101, no. 2, p. 237-240.

DESCRIPTORS: *Metals, *Tensile properties, Fracture (Mechanics), Loading (Mechanics), Temperature, Aging (Materials), Degradation, Zinc, Aluminum, Silver, Platinum, Tests, Heat of activation.

An investigation was made of the life of pure metals over a broad range of temperatures and stresses. The metals used were: zinc (99.94%), and platinum (99.92%). The time T (in sec) elapsed from the moment of loading to fracture of the specimen was measured as a function of the amount of tensile stress σ (in kg/mm^2) computed for the true cross section. The results of the measurements corresponded to the equation $T = Ae^{-a\sigma}$ (for temperature T constant), in which the coefficients A and a are determined by the properties of the metal studied and the temperature. The temperature dependence of the life was obtained in the form: $T = Be^{U/kT}$ (for σ = const), in which U has the meaning of the activation energy of the process of breakdown. The values of U found experimentally vary within the limits of several tens of kilocalories per mole and agree in order of magnitude with the activation energy of processes of self-diffusion and vaporization of metals and may be expressed by the relation $U = U_0 - \gamma\sigma$ in which U_0 is the energy constant of process of breakdown and depends only on the properties of the material. The energy U_0, found from the temperature-time dependence of the strength, agrees closely with the energy of sublimation of pure metals. The process of fracture may be a gradual disruption of interatomic bonds, leading to the formation of local fractures and culminating, finally, in the division of the solid into parts.

Aerodynamics and Pneumatics

Bogachev, A. A. and Galkin, V. S.
STRONG INTERACTION ON A PLATE CONSIDERING SLIP AND THE TEMPERATURE JUMP AT THE BOUNDARY, tr. by B. W. Kuvshinoff. 19 Aug 63, 12p 8refs APL/JHU TG 230-T400.
Contract NOw 62-0604-c.
Order from $0.50 63-11709

Trans. of Inzhenernyi Zhurnal (USSR) 1962, v. 2, no. 2, p. 231-238.
An unedited rough draft trans. is available from OTS or SLA $1.60 as 63-19533, FTD-TT-63-304, 10 Apr 63 [15p].

DESCRIPTORS: Superaerodynamics, Flat plate models, *Laminar boundary layer, Gas flow, Temperature, Hypersonic flow, Angle of attack, *Heat transfer, Fluid mechanics.

For abstract see Technical Translations 10:337, 1963.

Busemann, A.
THE AXIALLY SYMMETRICAL CONIC SUPERSONIC FLOW (Die Achsensymmetrische Kegelige Überschallströmung). [1963] [37p] foreign text included 8refs
Order from SLA $3.60 63-18822

Trans. of Luftfahrtforschung (Germany) [1942] v. 19, no. 4, p. 137-144.

DESCRIPTORS: *Axially symmetric flow, *Supersonic flow, Conical bodies, Differential equations, Velocity, Mach number, Gas flow, Mathematical analysis.

Busemann, A.
HODOGRAPH METHOD OF GAS DYNAMICS. [1963] (refs omitted)
Order from SLA $1.10 63-20235

Trans. of article from an unidentified source, n. d.

DESCRIPTORS: *Gas flow, *Differential equations, Transformations (Mathematics), Mathematical analysis

Carriere, M. Z.
ALTERNATING GAS FLOWS (Écoulements Gazeux Alternatifs). [1963] [33p] (foreign text included)
Order from SLA $3.60 63-20345

Trans. of [Journal de Physique et le Radium] (France) [1928, ser. 6] v. 9, no. 6, p. 187-204.

DESCRIPTORS: *Gas flow, Surface area, Cylindrical bodies, Ducts, Stroboscopes, Velocity, Measurement, Conical bodies.

Minostsev, B. B.
HYPERSONIC FLOW PAST AXISYMMETRIC BODIES FLYING AT AN ANGLE OF ATTACK. 14 June 63 [22]p. 5 refs. FTD-TT-63-406.
Order from OTS or SLA $2.60 63-23651

Unedited rough draft trans. of [Fiziko-Tekhnicheskii Institut, Moscow]. Trudy (USSR) 1961, v. 7, p. 136-151.

DESCRIPTORS: *Fluid mechanics, *Hypersonic flow, *Asymmetric bodies, *Angle of attack, Gas flow, Boundary layer, Equations, Numerical analysis.

A presentation is made of the solution of the problem of the flow of an ideal gas moving at high supersonic velocity past axisymmetric bodies at angle of attack. The problem was solved by expanding the unknown characteristics of the flow into a series with respect to parameter $\epsilon = (\gamma - 1)/(\gamma + 1)$. The problem was solved in the first approximation in quadratures. (Author)

Romanovskii, Yu. M. and Strelkov, S. P.
EFFECT OF ATMOSPHERIC TURBULENCE ON AN AIRPLANE WITH FELXIBLE WINGS AT DIFFERENT SPEEDS OF FLIGHT. 3 Sep 63 [16p] 10refs FTD-TT-63-750.
Order from OTS or SLA $1.60 63-24042

Unedited rough draft trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Mekhanika i Mashinostroenie, 1959, no. 4, p. 3-10.

DESCRIPTORS: *Airplanes, *Wings, Elasticity, Aerodynamic loading, *Gust loads, *Atmospheric motion, Flutter, Vibration, Statistical analysis, Flight speeds

A method is described which makes it possible to obtain simply the statistical characteristics of forced vibrations of an elastic airplane wing under the action of atmospheric turbulence. With its help one can take into account vibrations with different degrees of freedom. The increase in the number of degrees of freedom per unit leads to an increase in the order of solvable system of algebraic equations by two units. Meanwhile into the standard program it is necessary to introduce insignificant changes; the time for the computation correspondingly is increased by a small factor. Comparison of the statistical characteristics of vibrations of one and the same model of airplane shows that with sufficiently low frequencies of torsion of a wing close to the critical rates of flutter one should not disregard the torsion of the wing, but it is necessary to take it into consideration in computing the joint bending-torsional vibrations of the wing. (Author)

METALLURGY

PLANT FOR CASTING METALS, PARTICULARLY SLAB ZINC. Sep 63.
Order from TTIS $27.00 TTIS NS 141

Trans. of French patent 1,319,216, by Verwaltungs Ges. Moeller & Neumann o. H. G.

DESCRIPTORS: *Zinc, Metals, *Casting, Industrial plants

THE TESTING AND PROPERTIES OF HEAT-RESISTING MATERIALS. Mar 58 [12p] GRC/T. 206; [BISI] Trans. 628; [DSIR] NLL M.4136.
Order from OTS or SLA $1.60 62-24143

Summary trans. of Ts[entral'nyi] N[auchno]-I[ssledovatel'skii] I[nstitut] T[ekhnologii i] Mash[inostroeniya] Moscow. [Trudy] (USSR) 1957, v. 79, p. 5-214.
##A complete trans. of p. 25-45 is available from OTS or SLA $3.60 as 59-11252 [1959] [39p].

DESCRIPTORS: *Heat resistant metals and alloys, Diffusion, *Steel, Stresses, Creep, Heat treatment, *Molybdenum alloys, Corrosion, Turbines, Industrial production, Welds, Springs, Relaxation time, Thermal conductivity, Resistance (Electrical), Plasticity, Films, Oxides,

Contents:
On the mechanism of diffusion in solid metals, by I. L. Mirkin
##A study of the creep and rupture of steels in zones of stress concentration, by I. L. Mirkin and I. I. Trunin
The effect of temperature variations on creep resistance, by S. I. Matveev and L. P. Trusov
The effect of heat treatment on relaxation creep in austenitic steels, by I. A. Oding and Z. N. Patropavlovskii
The effect of molybdenum on relaxation creep in low-carbon pearlitic steels for steam pipelines, by V. Z. Tseitlin
Cast austenitic steel with decreased sensitivity to intercrystalline corrosion, by G. P. Fedortsov-Lutikov and T. S. Griboedova
Austenitic steels for large cast turbine components, by L. P. Nikitina and A. S. Tereshkovich
A study of production steel type EI.531, by M. A. Filatova
Welded steam-pipe joints in dissimilar steels, by E. S. Slepak and M. A. Filatova
Long-term relaxation tests on spring steels, by T. I. Volkova
The high-temperature thermal conductivities and electrical resistivities of some heat-resisting materials, by V. I. Perova and L. I. Knoroz
The time-strain relationship in the second stage of creep, by L. P. Nikitina
The calculation of limiting creep strength from the plastic properties of materials, by L. P. Nikitina
Study of the structure of oxide films on heat-resisting steels (EI.434 and EI.395) by S. A. Yuganova and B. I. Gorosakov.

Allard, J., Bonneymay, M., and Darrécamp, C.
RAPID METHODS OF POTENTIOMETRIC ESTIMATION OF TERVALENT CHROMIUM. Aug 63.
Order from BISI £4 10s BISI-3332

Trans. of Chrome Dur (France) 1959/1960, p. 33-39.

DESCRIPTORS: *Chromium, Hydrogen, Atomic structure, Potentiometers.

Ardenne, M. von, Jäger, G., and Schiller, S.
A 200 kW ELECTRON BEAM MULTIPLE-CHAMBER FURNACE. Oct 63
Order from BISI £2 10s BISI-3239

Trans. of Neue Hütte (East Germany) 1963, v. 8 [no. 1] p. 2-5.

DESCRIPTORS: *Electron beams, Vacuum furnaces, Combustion chambers, Multiple operation, Design.

Astier, J.
USE OF CONCENTRATES. Oct 63.
Order from BISI £5 BISI-3380

Trans. of Revue de Métallurgie (France) 1963, v. 60 [no. 1] p. 9-22.

DESCRIPTORS: *Ores (Metal sources), Sintering, Sinters.

Barats, A. I.
INCREASING THE STRENGTH AND WEAR RESISTANCE OF MACHINE PARTS BY ROLLER-BURNISHING. 28 Mar 58 [9p] 3refs TIL Trans. no. 140[illegible] [DSIR] NLL M. 4112.
Order from OTS or SLA $1.10 62-24119

Trans. of Metallovedenie i [Termicheskaya] Obrabotka Metallov (USSR) 1957, no. 9, p. 47-51.

DESCRIPTORS: Surfaces, Hardening, *Rolling mills, Machines, *Structural parts, Wear resistance, Industrial equipment, Design.

The article describes experience gained in roller-burnishing machine parts, the design of equipment used and the performance of surface hardened parts in operation. (Author)

Barlocco, C. and Ricci, A.
MAIN CHARACTERISTICS OF A WORKS TRANSPORT SYSTEM FOR A LARGE INTEGRATED STEEL WORKS TO BE CONSTRUCTED IN 1980. Oct 63
Order from BISI 2 15s BISI-3400

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, *Transportation, *Steel industry, Industrial plants.

Bergermann, E. and Koch, W.
IN WHAT WAYS AND TO WHAT DEGREE CAN THE INTERNAL TRANSPORT, THE HANDLING PLANT AND THE PRODUCTION PLANT BE INTEGRATED? Oct 63
Order from BISI £4 5s BISI-3401

Trans. of mono. (paper) presented at the International Works Transport Conferences, Paris, May 63.

DESCRIPTORS: *Conferences, *Transportation, Handling, Production, Industrial plants, Steel industry.

Bergrath, H.
TRANSPORT OF SLAG, REFUSE AND BY-PRODUCTS IN STEELWORKS. Oct 63
Order from BISI £7 10s BISI-3402

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: Steel industry, *Transportation, *Slags, *Wastes (Industrial), *Conferences.

Bey, M.
TECHNICAL ASPECTS OF OPERATIONS AND ORGANISATION IN THE DESPATCH OF FINISHED AND SEMI-FINISHED PRODUCTS FROM STEELWORKS. Oct 63
Order from BISI £6 5s BISI-3403

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, *Steel industry, *Transportation, Storage.

Borodin, V. P., Darmanyan, P. E., Yudson, I. A., and Shevandina, L. S.
CHANGE-OVER OF O. H. FURNACES FROM OIL TO NATURAL GAS FIRING (Opyt Perevoda Mazutnykh Martenovskikh Pechei na Otoplenie Prirodnym Gazom). Jul 57 [21p] (foreign text included) USCL T. no. 4419; [BISI] Trans. no. 538; [DSIR] NLL M. 3403.
Order from OTS or SLA $2.60 62-23969

Trans. of Stal' (USSR) 1957, v. 17, no. 2, p. 124-129.

DESCRIPTORS: *Open hearth furnaces, *Natural gas, Fuels, *Fuel consumption, Economics, Fuel oil, Gas burners, Pressure.

Natural gas is a comparatively cheap, high-energy fuel for the firing of OH furnaces in processing of medium quality and high quality steels. The design of the burner must be changed when a change is made from fuel oil to natural gas firing. The "improved Groshev" burner so far used for firing a gas/fuel oil mixture needs further improvement for burning cold natural gas in OH furnaces. The pressure of gas and fuel oil upstream of the burner must be kept constant to get a good shape of the fuel oil/gas flame. The pressure of natural gas should be increased to 3 atm. (44 psi) to burn it more rapidly and efficiently in the furnace. Because natural

gas is at an insufficient pressure for securing the best shape of flame, a greater quantity of compressed air has to be used. To reduce this, natural gas compressed to 10 atm. (about 150 psi) should be used for atomising fuel oil. The consumption of fuel oil for rendering the gas flame luminous is very high (up to 37% of the heat introduced into the furnace). Experiments on replacing fuel oil by cracked natural gas should be undertaken. (Author)

Broche, J.
THE CHIEF CHARACTERISTICS OF INTERNAL TRANSPORTATIONS IN THE MOST MODERN LARGE INTEGRATED PLANTS AND IN THOSE WHICH WILL BE BUILT IN 1980, CHAPS. 1-5, Oct 63
Order from BISI £6 15s BISI-3404

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, *Transportation, Industrial plants, Production, *Steel industry.

Contents:
Evolution of production techniques
Development of the means of transport
General layout problems
The plant of the future
Contents list.

Brovman, M. Ya.
DEFORMATION OF THE WORK-MATERIAL IN CROSS ROLLING. 4 Nov 59 [14p] 5refs TIL Trans. no. 1525; BISI Trans. no. 1456; [DSIR] NLL M.4874.
Order from OTS or SLA $1.60 62-25332

Trans. of Stal' (USSR) 1959 [v. 19] Rolling and Tube Manufacture Suppl, p. 22-23.

DESCRIPTORS: *Rolling mills, *Pipes, Metals, Deformation, Stresses, Cavitation.

A method of calculation is presented and a condition for critical reduction producing axial cavity-formation is arrived at. The values are close to those obtained by Smirnov's method and also correspond with measured values. (J. I. S. I. abstract)

Cerbo, G. and Florá, F.
SOME TECHNICAL AND ORGANISATIONAL ASPECTS RELATING TO TRANSPORT AND DISPATCH OF FINISHED AND SEMI-FINISHED PRODUCTS OF STEELWORKS. Oct 63
Order from BISI £ 4 10s BISI-3405

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, *Transportation, *Steel industry, Scheduling.

Chatet, L.
ENQUIRY INTO HOT BLAST VALVES. Oct 63.
Order from BISI £2 BISI-3399

Trans. of Centre de Documentation Siderurgique. Circulaires d'Informations Techniques (France) 1956, v. 13, no. 3, p. 549-554.

DESCRIPTORS: *Valves, Heat, Air blast, Design, *Blast furnaces.

Chernokh, S.
CONSTRUCTION OF BLAST-FURNACES WITH THIN-WALLED STACKS (Konstruktsiya Domennykh Pechei s Tonkostennoi Shakhtoi) tr. by R. Sewell. Jul 57 [12p] USCL T. no. 4316; [BISI] Trans. 548; [DSIR] NLL M.3402.
Order from OTS or SLA $1.60 62-23968

Trans. of Stal' (USSR) 1956 [v. 16] no. 8, p. 682-689.

DESCRIPTORS: *Blast furnaces, Design, Refractory materials, Economics, Construction.

In modern thin walled furnaces, the stack casing is between 20 and 30 m. m. thick and the inclined stack lining is from 8 to 9" thick. The gap between the stack and the casing must be a minimum, about 30 m. m., and is rammed with carbon in the lower part of the stack. The casing of the bosh and hearth is from 30 to 35 m. m. thick. The boshes are externally cooled if the cooling water used is contaminated. Flat coolers are essential. The degree of humetic sealing of thin walled furnaces is their most important advantage. Thin walled furnaces always have smooth walls even when some of the lining is lost, and this gives uniform working and drop of the burden. Less dust is made, less coke is consumed and output is increased.

Corona, L. and Cassani, R.
HANDLING OF SLAG AND WORKS REFUSE. Oct 63
Order from BISI £4 10s BISI-3406

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, Blast furnaces, Dusts, *Slags, Handling, *Wastes (Industrial), Iron industry, Transportation.

Dupon and Meyer, M.
OPERATIONS AND EQUIPMENT EMPLOYED FOR THE HANDLING OF SLAG AND OTHER WASTE PRODUCTS. Oct 63
Order from BISI £9 15s BISI-3407

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Wastes (Industrial), *Slags, Handling, *Transportation, *Conferences.

Éremenko, V. N.
THE ROLE OF SURFACE PHENOMENA IN METALLURGY. 1963 approx 200p
Order from CB $27.50

Trans. of mono. [Poverkhnostnye Yavleniya v Metallakh i Splavakh i Ikh Rol' v Protsessakh Metallurgii, Moscow, 1961, 224p.].

DESCRIPTORS: *Metallurgy, Powder metallurgy, Adhesion, *Surface tension, Carbides, Nitrides, Crystal structure, Refractory materials, Thin films, Mechanical properties.

Fazan, B.
THE PHENOMENA OF BEADING AND FLATTENING OF THE ROLLS IN 4-HIGH MILLS. Oct 63
Order from BISI £7 15s BISI-3341

Trans. of Revue de Métallurgie (France) 1960, v. 57 [no. 11] p. 1003-1018.

DESCRIPTORS: *Rolling mills, Deformation, Stresses.

Geguzin, Ya. E. and Pines, B. Ya.
MIXING ENERGY OF BINARY METAL ALLOYS. III. BISMUTH ANTIMONY SYSTEM. [1963] [10]p. 6 refs.
Order from OTS or SLA $1.10 63-18736

Trans. of Zhurnal Fizicheskoi Khimii (USSR) 1952, v. 26, no. 1, p. 27-30.
Another trans. is available from OTS $0.50 as 62-11362, MDF G-200 [1961] 6p.

DESCRIPTORS: *Antimony alloys, *Bismuth alloys, Phase studies, Alloys, Specific heat, Heat of Fusion.

For abstract see Technical Translations 8: 701, 1962. (See also 62-11358)

Gotlib, E. A., Polyakova, R. B., and Yashchenko, Ya. V.
WELDING PIPES MADE OF BRAND EI-695R AND EP-17 AUSTENITIC STEELS. [1963] [10p] C. E. Trans. 2904.
Order from OTS or SLA $1.10 63-23972

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 11, p. 63-67.

DESCRIPTORS: *Welding, *Pipes, *Steel, Austenite, Ferrites, Welds, Welding rods, Electrodes, Chromium alloys, Nickel alloys, Fracture (Mechanics),

Experimental work was performed to determine a method of preventing hot cracks in the seams when welding austenitic chrome-nickel steels. Satisfactory resistance to the formation of hot cracks was obtained in the case of EP-17 steel by the introduction of a certain quantity of ferrite into the weld metal by the use of type TsT-16 austenite-ferrite electrodes. Type TsT-16-1 electrodes, which have an increased ferrite content, were used for root runs. For the welding of EI-695R steel, which possesses a greater austenitic excess (Cr/Ni < 1), AZh-13-18 and AZh-13-15 pure austenitic steel electrodes with an increased carbide phase content were used. The AZh-13-18 and AZh-13-15 type electrodes, which possess properties suited to the technique of welding pipes of EI-695R austenitic steel, require further development to ensure easy removal of the slag, improved bead formation and increased stability against crack formation in the built-up metal.

Gurevich, L. D.
PRACTICE IN TUBE MILL COSTING. 28 Aug 57 [4p] TIL Trans. no. 1359; [BISI] Trans. no. 626; [DSIR] NLL M. 4138.
Order from OTS or SLA $1.10 62-24145

Trans. of Stal' (USSR) 1957, v. 17 [no. 6] p. 569-570.

DESCRIPTORS: *Pipes, Rolling mills, Costs, Production.

Herrmann, E.
ALUMINUM AND ALUMINUM ALLOYS. Pt. 1 of Development in the Field of Continuous Casting of Non-Ferrous Metals. [1963] 22p (figs omitted)
Order from SLA $2.60 63-20402

Trans. of [das] Metall (West Germany) 1962, v. 16, no. 4, p. 293-300.

DESCRIPTORS: *Aluminum, *Aluminum alloys, *Casting

Topics include: heavy castings; multiple casting; continuous casting with inlays in Vereinigte Leichmetall-Werke; Hunter-Douglas horizontal continuous casting machine; Hazelett machine; rotary casting machines; and Properzi-machines.

Herrmann, E.
COPPER AND COPPER ALLOYS. Pt. 2 of Developments in the Field of Continuous Casting of Non-Ferrous Metals. [1963] 18p (figs omitted)
Order from SLA $1.60 63-20403

Trans. of [das] Metall (West Germany) 1962, v. 16, no. 5, p. 413-419.

DESCRIPTORS: *Copper, *Copper alloys, *Castings

Topics include: continuous casting installation "L/L"; Wertli's several bar machines; Hazellett-machine Properzi machine; German continuous casting machines; the Lobeck continuous casting machine; the completely continuous LOMA casting machine; installation of the Enfield rolling mills; and installation of the Janney cylinder company

Kaufman, M. M.
THE USE OF WATER-COOLED PLUGS IN THE PIERCING OF BILLETS. 28 Nov 58 [20p] TIL Trans. no. 1458; BISI Trans. no. 1130; [DSIR] NLL M. 4309
Order from OTS or SLA $1.60 62-24193

Trans. of Stal' (USSR) 1958, v. 18 [no. 2] p. 144-151.

DESCRIPTORS: *Pipes, *Steel, Hot-working, *Rolling mills, Cooling, Water,

The use of hollow, non-changeable plugs enables a high degree of automation to be introduced into tube mills, the internal surface quality of pierced tubes is improved, and the consumption of plugs per ton of finished tubing is considerably reduced. The design, chemical composition, manufacturing methods and cooling system for non-changeable, water-cooled piercer plugs are given.

Keler, E. K. and Leonov, A. I.
ON THE SWELLING OF IRON OXIDE AND ITS COMPOUNDS DURING HEATING, tr. by S. Dobrianskyji. [1962] [12]p. 8 refs. Trans. no. CRL/T.736; [DSIR NLL] M.3663.
Order from OTS or SLA $1.60 62-25271

Trans. of Ogneupory (USSR) 1959 [v. 24] no. 5, p. 225-231.

DESCRIPTORS: *Iron compounds, *Oxides, Heating, Refractory materials, Chromium compounds, Furnaces, *Deformation, Gases, Copper compounds, Cobalt compounds.

Experimental results of the study of swelling of iron oxides, mixtures of iron and chromium oxides as well as copper and cobalt oxides during heating in various gases are reported. (Author)

Kohn, A.
STUDY BY THERMAL ANALYSIS OF THE SOLIDIFICATION OF STEELS (WITH DISCUSSION) [1963] 38p (figs. omitted) 17 refs
Order from SLA $3.60 63-20053

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1962, v. 59, p. 713-734.

DESCRIPTORS: *Steel, *Alloys, *Iron, *Phase studies, Microstructure, Crystal structure, Austenite, *Transformations

Twenty-five different alloys, including high purity metals, prepared in the laboratory and industrial steels of various kinds were studied. The irons without carbon showed very strong supermelting (to nearly 180°C). All of the irons observed did not show very high supermelting. The presence of deoxidizers in the metal like aluminum, silicon, or carbon prevented the retention of elevated supermelting. In the alloys which showed a peritectic transformation in the course of solidification, the transformation followed by diffusion towards the delta phase, the elements contained in the liquid through the gamma phase. The peritectic transformation was not complete in certain nickel-chromium alloys of the 18-8 type and a two phased structure was observed after cooling to the ambient. Several alloys whose chemical composition corresponded to the direct solidification of the austenitic state (hyperperitectic alloys) were able to effectively develop gamma iron crystals. But these alloys were equally able to start solidification by the development of metastable delta iron crystals.

Kornfel'd, V. N.
EFFICIENCY OF INTENSIFIED OPEN-HEARTH MELTING WITH OXYGEN UNDER SUITABLE OPERATING CONDITIONS, tr. by J. Murray. Apr 59 [18p] 15refs DLSL T/77/59; BISI Trans. 1194; [DSIR] NLL M. 4587
Order from OTS or SLA $1.60 62-24226

Trans. of Stal' (USSR) 1958 [v. 18] no. 12, p. 1095-1102.

DESCRIPTORS: *Open hearth furnaces, Oxygen, Melting, Steel industry.

In the form of a defining parameter in the generalised evaluation of the efficiency of the use of oxygen for speeding-up melts in open-hearth furnaces of different works, it is possible to assume the effective rate of its feed into the torch (cbm/hr (NTP): t/m^2, i.e, amount of oxygen fed in a unit of time (cbm/hr) per unit of load on the hearth. The efficiency of oxygen - relative increase of furnace output and relative fuel saving pertaining to 1 cbm of the oxygen rate consumed - is directly proportional to the rate of oxygen feed (both in bulk production melts as well as in trial melts on all steelplants using oxygen). The "rational" or true rate of oxygen feed into the torch in the periods of charging and heating-up is determined by the possibility of speeding up these operations, and thus depends on the organisation of production and should be established experimentally at each plant. The rational rate of oxygen feed into the torch in the melting period is approximately 1000 - 1250 cbm/hr: t/m^2 for all furnaces working the scrap-ore process, when adequately rapid and complete tapping of slag is assured. With limited supplies of oxygen, the practice of feeding it at uniform rate during the entire thermo-technical period (charging, heating-up, pouring of molten and melting), adopted at the present time at all steelplants using oxygen, is not always rational. (Author)

Krivoglaz, M. A. and Smirnov, A. A.
THEORY OF ORDER/DISORDER IN ALLOYS. 1963, 400p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono. [Moscow, 1958, 388p].

DESCRIPTORS: *Alloys, Transformations, Diffusion, Motion, Particles, Mechanical properties, Physical properties, Electrical properties, Magnetic properties.

Larichev, W.
PRELIMINARY TEST RESULTS FOR CHROMIUM-MOLYBDENUM-VANADIUM STEEL "EI-10" FOR THE CONNECTION OF FLANGES OPERATING AT TEMPERATURES OF 450-500°C. Apr 42 [11p] R. T. P. Trans. no. 1363; [BISI] Trans. no. 86; [DSIR] NLL M. 4278.
Order from OTS or SLA $1.60 62-24184

Trans. of Sovetskoe Kotloturbostroenie (USSR) 1940, no. 3, p. 107-111.

DESCRIPTORS: *Steel, Vanadium alloys, Molybdenum alloys, Chromium alloys, *Flanges, Heat treatment, Mechanical properties, Bolts, Temperature.

Leonard, J.
TECHNICAL DEVELOPMENT OF ROLLING MILL ROLLS. Oct 63.
Order from BISI £4 5s BISI-3353

Trans. of Revue Universelle des Mines (France) 1962 [v. 109, ser. 9] v. 18, no. 12, p. 680-690.

DESCRIPTORS: *Rolling mills, Industrial equipment, Materials, Steel

Melese, Barache, Comes, Elina, and Hestaux.
INVENTORY CONTROL OF SPARE PARTS IN THE STEEL INDUSTRY. Oct 63.
Order from BISI £3 10s BISI-3337

Trans. of mono. International Conference on Operational Research (no. 2) [held at] Aix-en-Provence [5-9 Sep] 1960. Proceedings, p. 309-321.

DESCRIPTORS: *Conferences, *Steel industry, Machines, Structural parts, Supplies. Scheduling, Control

Naumann, F. K.
CONTRIBUTION ON THE DETECTION OF THE SIGMA PHASE AND ON THE KINETICS OF ITS FORMATION AND SOLUTION IN IRON-CHROMIUM AND IRON CHROMIUM-NICKEL ALLOYS. Oct 63
Order from BISI £5 15s BISI-3295

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1963, v. 34 [no. 3] p. 187-194.

DESCRIPTORS: *Nickel alloys, *Chromium alloys, *Iron alloys, Transformations, Hardness.

Nazarov, G. V. and Zaitsev, Yu. N.
ELECTROSLAG WELDING OF SHIP PARTS [AND] ELECTROSLAG WELDING OF PRESS SHAFTS WITH A PLATE ELECTRODE. 17 Oct 63, 17p 7refs
JPRS: 21485.
Order from OTS $0.50 63-31955

Trans. of #Svarochnoe Proizvodstvo (USSR) 1963, no. 8, p. 22-28.

DESCRIPTORS: *Electroslag process, *Welding, *Ship structural components, Steel, Electrodes, Shafts.

A technique was developed for the electroslag welding of crucial ship parts made of 08GDNFL steel without subsequent thermal processing with an A-372r welder with three wire electrodes made of Sv-10GSMT steel under AN-8 flux. The use of electroslag welding in the construction of stems and sternposts for marine vessels is justified by the satisfactory quality of welding and the high economic indices. (Nazarov). A technique of electroslag welding with plate electrodes was developed and tested for production use for press shafts and other machinery made of 40, 45, 40Kh, and 40KhN steels. With an 0.22% carbon content in the seam there is a considerable drop in the impact viscosity of the deposited metal. The fatigue limit of welded seams is higher than that of the basic metal for 45 steel, and lower by 8-10% for 40Kh steel. (Zaitsev)

Oreshkin, G.
BLAST FURNACE STACK COOLING: WE MUST NOT BE INFLUENCED BY OUTWORN TRADITIONS.
9 Feb 59 [3p] IM/C/9/59; BISI no. 1295.
Order from OTS or SLA $1.10 62-24214

Trans. from [Ekonomicheskaya Gazeta] (USSR) 1958, 21 Dec.

DESCRIPTORS: *Blast furnaces, Design, Maintenance.

Perlin, I. L.
CONSIDERATIONS OF STABILITY IN THE FLOATING PLUG DRAWING PROCESS FOR TUBES. 8 May 59 [8p] 1ref TIL Trans. no. 1500; BISI Trans. no. 1328; [DSIR] NLL M. 4569.
Order from OTS or SLA $1.10 62-24212

Trans. of Tsvetnye Metally (USSR) 1958, v. 31 [no. 9] p. 58-61.

DESCRIPTORS: *Pipes, Drawing (Machine processing), Dies, Friction, Stability.

The stability of the floating plug drawing process increases with a decrease in plug and die taper and with a decrease in the coefficient of friction. With an increase in the angle of plug taper an increase must also be made in the length of the cylindrical section of the plug, and vice versa. With a decrease in the diameter of the barrel of the plug a decrease must occur in the length of the cylindrical section of the plug, and vice versa. (Author)

Rist, A. and Bonnivard, G.
COUNTER-CURRENT REDUCTION OF AGGLOMERATE AT MEAN TEMPERATURES. [1963] [119p] 20refs
Order from SLA $9.60 63-20374

Trans. of mono. (report of laboratory tests carried out) by IRSID (Institut de Recherches de la Siderurgie) during 1961.

DESCRIPTORS: *Iron compounds, Oxides, Reduction, Blast furnaces, Gas flow, Gases, Laboratory furnaces, Grain structures (Metallurgy), Oxidation

Topics include: chemical conditions of the reduction in an elementary cutting and the influence of thermal and aerodynamic factors; choice of the fundamental factors of production, defining at all levels the chemical aspects of counter-current reduction; conditions of application of the results of production realized on the reduced model of a large scale apparatus; laboratory study of counter-current reduction of Ouenza agglomerate; application of the calculated results to a large scale operation; and preliminary trials of counter-current reduction of Lorrain agglomerates.

Shevakin, Yu. F.
AN ANALYSIS OF EXISTING METHODS FOR CALCULATING THE PROFILE OF THE ROLLS OF COLD TUBE REDUCING MILLS. 9 Dec 58 [18p] 6refs TIL Trans. no. 1460; BISI Trans. no. 1097; [DSIR] NLL M. 4322.
Order from OTS or SLA $1.60 62-24200

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 259-275.

DESCRIPTORS: *Rolling mills, Pipes, Aluminum alloys, *Curved profiles, Equations.

Shevakin, Yu. F.
THE MAGNITUDE AND DIRECTION OF AXIAL FORCES ACTING ON THE WORKPIECE IN THE COLD REDUCING OF TUBES. 9 Jan 59 [20p] 3refs TIL Trans. no. 1461; BISI Trans. no. 1098; [DSIR] NLL M. 4320.
Order from OTS or SLA $1.60 62-24198

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 295-313.

DESCRIPTORS: *Pipes, *Aluminum alloys, Rolling mills, Mechanical working, Deformation, Stresses, Friction.

Shimogo, Y. and others.
EFFECT OF CERTAIN OPERATING FACTORS (IN THE BASIC OXYGEN LD PROCESS) UPON THE METALLIC FIELD. Oct 63, 1200 words
Order from HB $4.20 HB-5934

Trans. of Tetsu to Hagane (Japan) 1963, v. 49, no. 3, p. 407-408.

DESCRIPTORS: *Blast furnaces, Operation, Oxygen, Injection, Metals.

Sokolov, A. V.
OPTICAL PROPERTIES OF METALS. 1963, 475p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Opticheskie Svoistva Metallov, Moscow, 1961, 464p].

DESCRIPTORS: *Metals, *Optical properties, *Alloys, *Photoelectric effect, *Ferromagnetic materials, Microscopy.

Sokolovskii, V. I., Gashukov, V. S., and Lirman, M. V.
EXPERIMENTAL INVESTIGATION INTO THE COLD REDUCING OF TUBES. 3 Apr 59 [19p] TIL Trans. no. 1482; BISI Trans. no. 1235; [DSIR] NLL M. 4590.
Order from OTS or SLA $1.60 62-24227

Trans. of Stal' (USSR) 1958, v. 18 [no. 12] p. 1112-1117.

DESCRIPTORS: *Pipes, *Rolling mills, *Cold-working Reduction, Stresses, Mathematical analysis, Oscillographs.

Investigations were carried out with a type KhPT-E150 cold reducing mill used for reducing tubes 150 mm in O. D. This mill incorporates a light-weight roll housing. The following values were calculated: feed and angle of rotation of workpiece; vertical pressure on the rolls (rolling load); forces operating in the connecting rods, tow bars, feed screw, mandrel bar and cam shaft; stresses operating at points on the housing and rail track; and stresses operating in the ends of the sledges.

Stöckl, E.
ELECTROCHEMICAL POLISHING OF THE INTERNAL SURFACES OF TUBES. [1962] 6p 4refs [TIL] Trans. no. 1555; [BISI-1620].
Order from SLA $1.10 62-14685

Trans. from Blech (West Germany) 1959 [v. 6] no. 10.

DESCRIPTORS: *Pipes, Surfaces, Electrolytic polishing, Electrochemistry.

For abstract see Technical Translations 3: 604, 1960.

Teterin, P. K.
AN ANALYSIS OF FRICTION FORCES AND ROLL ENGAGEMENT IN DISC MILLS. 16 Oct 58 [26p] 6refs TIL Trans. no. 1445; BISI Trans. no. 1085; [DSIR] NLL M. 4070.
Order from OTS or SLA $2.60 62-13204

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 207-226.

DESCRIPTORS: *Rolling mills, *Friction, Surfaces, Disks.

Teterin, P. K.
GEOMETRICAL CONSIDERATIONS IN OBLIQUE ROLLING. 6 Jun 58 [21p] 8refs TIL Trans. no. 1420; [BISI] Trans. no. 969; [DSIR] NLL M. 4088.
Order from OTS or SLA $2.60 62-24103

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl., p. 243-258.

DESCRIPTORS: *Rolling mills, *Geometric forms, Surfaces, Equations.

Tsygankov, E. M.
THE EFFECT OF THE SHAPE OF THE EDGES OF STRIP ON THE WELDED SEAM STRENGTH OF TUBES. 15 Oct 57 [10p] 1ref TIL Trans. no. 1372; [BISI] Trans. no. 701; [DSIR] NLL M. 4184.
Order from OTS or SLA $1.10 62-13184

Trans. of Stal' (USSR) 1957, v. 17 [no. 8] p. 728-730.

DESCRIPTORS: *Pipes, *Welding, Hot-working, *Welds, Metallography, Steel, Tensile properties.

Metallographic examination of samples of tube drawn from strip with varying angles of bevel, detected the presence at the seams of discontinuous inclusions consisting of minute oxide particles. Inclusions were fewer in the case of tube welded from strip with square edges. Samples of tube formed from strip with bevel angles of edges of 9 and 12° contained a large number of inclusions and had a tendency to become overheated. This can be caused by the intense initial heating of the

relatively thin ends of the bevelled edges. Angles of bevel up to 9° have virtually no effect on seam strength. Samples of tube welded from square-edged strip possessed the highest mechanical strength. Similar tests, carried out on the tube-welding mill at a tube rolling plant, confirmed these conclusions. In particular, a saving of 8 - 12% was made at this plant when forming tube from square-edged strip. Thus, for both continuous as well as non-continuous tube-welding mills, there is no call for the use of strip with bevelled edges. (Author)

Verelst, J. and Sy, A. de.
THE INFLUENCE OF CERTAIN ELEMENTS ON SPHEROIDAL GRAPHITE FORMATION IN CAST IRON Oct 63.
Order from BISI £7 BISI-3347

Trans. of Giesserei (West Germany) 1956, v. 43, 7 Jun, p. 305-315.

DESCRIPTORS: *Iron alloys, *Castings, *Graphite, Separation.

Violi, G.
THE USE OF OXYGEN IN OPEN-HEARTH FURNACES. Oct 63
Order from BISI £3 15s BISI-3390

Trans. of Metallurgia Italiana, 1963 [v. 55, no. 4] p. 105-110.

DESCRIPTORS: *Open hearth furnaces, Oxygen.

Zhurin, A. I.
ELECTROLYTIC REFINING OF NICKEL IN SULPHATE-CHLORIDE AND CHLORIDE SOLUTIONS (Ob Elektroliticheskom Rafinirovanii Nikelya v Sul'fatno-Khloristykh i Khloristykh Rastvorakh). Jun 61 [20p] (foreign text included) 5refs [DSIR] NLL M.3503.
Order from OTS or SLA $1.60 63-23377

Trans. of Izvest[iya] Vysshikh Ucheb[nykh] Zavedenii. Tsvetnaya Met[allurgiya] (USSR) 1960, v. 3, no. 3, p. 54-61.

DESCRIPTORS: *Nickel, *Electrolysis, *Sulfates, *Chlorides, *Electrolytes.

Experimental investigations were made of electrolytic refining of nickel in sulfate-chloride and pure chloride solutions. It was concluded that the use of pure chloride solutions with high nickel-ion concentrations or chloride-sulfate solutions with high nickel and chlorine concentrations, at relatively low sulfate-ion contents, permits stepping up the output of electrolytic shops by 50-100% without a significant capital expenditure. By employing high nickel concentrations, increasing the current density, and reducing the rate of circulation of the solution, it is possible to increase the output of the electrolyzers without at the same time increasing the capacity of the equipment for the removal of iron and cobalt.

Ferrous Metals

APPARATUS FOR STEEL PRODUCTION, tr. by J. R.-P. 18 Jul 63, 4p (fig omitted).
Order from OTS or SLA $1.10 63-23570

Trans. of German patent 409, 277, cl. 18b, gr. 18, by Fried. Krupp AG Friedrich-Alfred-Hütte, pat. from 9 Aug 23, pub. 4 Feb 25.

DESCRIPTORS: *Steel, Production.

METHODS FOR THE SAFE USE OF MAGNESIUM FOR THE DESULPHURISATION OF STEEL. Sep 63.
Order from TTIS $3.00 TTIS NS 140

Trans. of Polish patent 46, 844, by Institute of Ferrous Metallurgy, appl. 15 Jun 62, pub. 30 Apr 63.

DESCRIPTORS: *Steel, *Desulfurization, *Magnesium

Alferova, N. S., Pishchikov, G. P., and Konovalov, V. P.
THE MANUFACTURE AND PROPERTIES OF HOT ROLLED TUBES IN STEEL EI595. 16 Apr 58 [19p] 4refs TIL Trans. no. 1413; [BISI] Trans. no. 909; [DSIR] NLL M.4100.
Order from OTS or SLA $1.60 62-24107

Trans. of Stal' (USSR) 1958, v. 18 [no. 1] p. 60-66.

DESCRIPTORS: *Steel tubing, *Pipes, Rolling mills, Deformation, Heat resistant metals and alloys, Production,

Investigations made into the heat-resistant steel EI595, relating to the deformation properties of this material in the production of steel tubes, show that in the hot state EI595 is of lower ductility and higher resistance to deformation than other ferritic steels (Kh25T and Kh25Yu5) which have been applied to the tube manufacture. Generally speaking EI595 possesses completely satisfactory hot deformation properties, enabling the necessary hot rolling procedure to be determined and a production batch of tubes to be produced. Steel EI595 displays a strong tendency towards brittle fracture in the cold state. A reduction in the temperature of hot rolling, resulting in the formation of a fine granular structure, reduces the susceptibility of the steel to brittle fracture. However, the practical application of this characteristic property to hot tube rolling is limited due to the increase in the resistance to deformation of the steel at reduced temperatures. Tests into the effect of heat treatment on the tendency of the material towards brittle fracture show that heating up to 950°C followed by rapid cooling reduces the critical temperature at which the steel passes into brittle condition. (Author)

Antipov, K. I.
IMPROVED TECHNOLOGY FOR POURING HIGH-ALLOY STEEL. [1963] 2p [DSIR] NLL M.5377.
Order from OTS or SLA $1.10 63-23926

Trans. of #Stal' (USSR) 1963, v. 23, no. 2, p. 136.

DESCRIPTORS: *Stainless steel, *Casting, Castings, Chromium alloys, Nickel alloys, Titanium alloys, Molybdenum alloys, *Slags, Mechanical properties, Surface properties, Alloys,

A study was made of pouring stainless steel with the use of liquid synthetic slag. When placed on the surface of liquid metal in a semicontinuous-casting mold, the slag absorbs and dissolves the non-metallic inclusions present in steel. The slag also protects the metal against contact with the atmosphere and reduces heat losses. A substantial improvement in the quality of ingot and sheet surfaces was obtained. When the slag was placed in the bottom of the ingot mold and the steel poured from the top, the surface quality of the metal was never lower than that obtained by bottom pouring. The physico-mechanical properties satisfied the requirements of standard specifications. Pouring under a layer of synthetic slag increases the yield of sound metal and reduces losses in the production of high-alloy steel. The optimum slag composition was determined for semi-continuous casting and for top pouring methods.

Borisov, S. I.
THE MANUFACTURE OF ALLOY STEEL BOILER TUBES FOR OPERATION AT HIGH AND VERY HIGH STEAM TEMPERATURES AND PRESSURES. 2 Sep 58 [13p] TIL Trans. no. 1435; BISI Trans. no. 1037; [DSIR] NLL M. 4079.
Order from OTS or SLA $1.60 62-24094

Trans. of Stal' (USSR) 1958, v. 18 [no. 5] p. 442-446.

DESCRIPTORS: *Steel, *Boiler tubes, *Steam pipes, Production, Rolling mills, Heat treatment.

Tests were carried out under laboratory and production conditions in producing high-duty seamless tubes in a number of alloy steels for steam piping and superheater applications. Results obtained give an indication of further investigations that should be made in developing production techniques for boiler tubes. (Author)

Cadek, J.
CARBIDE PRECIPITATION IN MOLYBDENUM STEELS AT 650°C. Oct 63.
Order from BISI £7 15s BISI-3365

Trans. of [Vysoka Skola Banska]. Sbornik [Vedeckych Praci] (Czechoslovakia) 1961, v. 7, no. 6, p. 569-606.

DESCRIPTORS: *Steel, *Molybdenum alloys, Chemical precipitation, *Carbides, High temperature research

Calmettes, J., Glenat, L., and Bertin, J.
DETERMINATION OF HYDROGEN IN STEELS AND FERRO-ALLOYS. Oct 63.
Order from BISI £4 10s BISI-3292

Trans. of Centre de Documentation Sidérurgique. Circulaire d'Informations Techniques (France) 1963, v. 20, no. 3, p. 749-766.

DESCRIPTORS: *Steel, *Iron alloys, *Hydrogen, Chemical analysis.

Druzhinin, V. V.
ON THE METHODS OF DETERMINING THE SPECIFIC LOSSES OF COLD-ROLLED TRANSFORMER STEEL. Oct 63.
Order from BISI £2 5s BISI-3388

Trans. of Vestnik Elektropromyshlennosti (USSR) 1959 [v. 30] no. 5, p. 41-43.

DESCRIPTORS: *Steel, Rolling mills, Control systems, Sheets, Transformers

Economopoulos, M. and Greday, T.
INFLUENCE OF THE MANGANESE CONTENT ON THE ANISOTHERMAL TRANSFORMATION DIAGRAMS OF CONSTRUCTION STEELS WITH 0.2% OF CARBON. [1963] [35p] 15refs
Order from SLA $3.60 63-20605

Trans. of Revue Universelle des Mines (France) 1962 [v. 105, ser. 9] v. 18, no. 9, p. 559-577.
Another trans. is available from SLA $3.60 as 63-10940, 28 Jan 63 [39p].

DESCRIPTORS: *Steel, *Manganese alloys, Carbon alloys, Castings, Cooling, Transformations, *Microstructure, Austenite, Bainite, Martensite, Mechanical properties.

Continuous cooling diagrams were constructed for six steels at 0.15-0.20% C, whose manganese content is variable in the limits 0.85-2.13%. Three steels contained 0.2% Si while three others only contained several hundredths of 1% of this element. The general aspect of the diagrams is not influenced by the variation of the Mn content. The position and the area of the different domains of the transformation in the time-temperature diagram is greatly modified when the Mn content increases. The whole diagram is displaced in the sense of an increase in the hardenability. The temperature of equilibrium transformation, intermediate and martensitic are lowered. The martensitic and bainitic domains of transformation are enlarged. The aspect of the corresponding structures at the different domains of recooling is not modified. One verifies that the combined action of the Mn and Si causes a stabilization of the austenite. For a fixed value of the elastic limit, - the speed of the recooling is diminished, - the ductility is improved. (Author)

Economopoulos, M., Greday, T., and Habraken, L.
SOME ASPECTS OF THE BAINITE STRUCTURE IN CARBON STEELS OF VARIABLE MANGANESE AND MOLYBDENUM CONTENT. [1963] [31p] 12refs
Order from SLA $3.60 63-20572

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1963, v. 60, no. 1, p. 11-22.

DESCRIPTORS: *Steel, *Molybdenum alloys, *Manganese alloys, Carbon alloys, *Microstructure, *Bainite, Cooling, Austenite, Grain structures (Metallurgy), Transformations.

With the combination of dilatometry, thermal analysis, and electron metallography, demarcation was made of the bainitic domains in steels with 0.2% C, containing either 1.3 to 1.9% Mn, or 0.03 to 1.5% Mo. The TTT curves thus obtained are valuable when the steel is

subjected to a continuous cooling after austenitization. Systematic examination of the microstructures of these steels reveals that: (1.) The classical appearance of bainite, that is to say, the upper or lower bainite which are characteristic of a eutectoid steel or a steel with a carbon content equal to at least 0.4%, is not observed. (2.) The bainitic structures of these steels are of the granular type. They are formed from probainitic ferrite and austenite enriched in carbon or possibly in alloying elements or else of probainitic ferrite containing carbide agglomerates. (3.) Manganese stabilizes the metastable austenite zones. It seems to act on their form and arrangement. It is responsible for the stabilization of lamellae or of nodules of austenite down to room temperature. (Author)

Finkel'shtein, Ya. S. and Shchegol', T. S.
INCREASING THE DURABILITY OF NON-ROTATING PIERCING MILL PLUGS. 25 Mar 58 [11p] 9refs TIL Trans. no. 1400; [BISI] Trans. no. 832; [DSIR] NLL M. 4117.
Order from OTS or SLA $1.60 62-24124

Trans. of Stal' (USSR) 1957, v. 17 [no. 12] p. 1099-1103.

DESCRIPTORS: *Steel, Hardening, Heat treatment, *Pipes, Milling machines, Wear resistance.

The basic means of improving the durability of non-rotating piercing plugs is by obtaining and preserving during working a wear-resistance austenitic structure in the high-manganese plug steel used. The requisite plug metal structure can be obtained by: (a) the use of steel G18; (b) hardening by high-speed heat treatment; (c) the use of a plug of streamlined, elongated shape with a cylindrical nose. The requisite plug metal structure can be maintained by: (a) the correct setting of the oblique rolls; (b) ensuring that the plug is set in optimum position in the deformation zone; (c) liberal water cooling of the plug between piercing operations. As a result of improvements introduced an approximately sixfold reduction in plug consumption was achieved. (Author)

Fomichev, I. A.
A NEW METHOD FOR TESTING THE PLASTIC PROPERTIES OF METALS AT ELEVATED TEMPERATURES. 17 Mar 59 [8p] TIL Trans. no. 1486; BISI Trans. no. 1261; [DSIR] NLL M. 4557.
Order from OTS or SLA $1.10 62-24206

Trans. of Zavodskaya Laboratoriya (USSR) 1955, v. 21 no. 7, p. 841-844.

DESCRIPTORS: *Steel tubing, Rolling mills, Stresses, Deformation, Test methods, *Pipes.

A new method was developed for determining the workability of steel under conditions analogous to those obtaining in oblique rolling mills. The conditions of stress of the material being tested are identical to those of material being rolled in oblique rolling mills. By using the proposed method for determining the plastic properties of steels it is possible to establish the temperature range for hot rolling in oblique rolling mills. The use of the test method described makes it considerably easier to determine the optimum operating conditions for the manufacture of seamless tubes from new grades of steel. (Author)

Fomichev, I. A.
STRESS CONDITIONS IN OBLIQUE ROLLING. 20 Jun 58 [42p] 10refs TIL Trans. no. 1421; BISI Trans. no. 968; [DSIR] NLL M. 4089.
Order from OTS or SLA $4.60 62-24104

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 176-206.

DESCRIPTORS: *Steel, Rolling mills, Stresses, Rupture, Deformation, Cavitation.

The experimental data obtained confirmed the fact that the unevenness of plastic deformation in oblique rolling is the principal cause of the occurrence of tensile stresses which bring about central cavitation. Contrary to existing opinions, the theory relating to the occurrence of volumetric (externally applied) strain in oblique rolling being produced by the action of external compressive forces is considered erroneous. In contradistinction to existing explanations, circular failure should be studied as an occurrence relating to a particular type of stress condition. It is evident that circular break-up occurs when tensile stresses from the rolls are either partly or completely eliminated by the action of the compressive stresses from the point of the plug in the core of the billet. At the same time, at a certain distance from the centre of the billet, the stresses from the rolls remain quite large and exceed the breaking resistance of the workpiece. (Author)

Fujoika, T. and others.
ON THE HOT WORKABILITY OF STAINLESS STEELS Oct 63, 1200 words
Order from HB $4.20 HB-5978

Trans. of Tetsu to Hagane (Japan) 1963, v. 49, no. 3, p. 625-626.

DESCRIPTORS: *Stainless steel, Hot working,

Griese, F. W. and Bulle, G.
FUTURE DEVELOPMENT OF INTERNAL TRANSPORT IN NEW INTEGRATED STEELWORKS PRODUCING TONNAGE STEEL. Oct 63
Order from BISI £ 5 BISI-3408

Trans. of mono. (paper) presented at the International Works Transport Conference, Paris, May 63.

DESCRIPTORS: *Conferences, *Transportation, *Steel industry.

Haring, W.
EXPERIENCE WITH AN EXTENSIVELY MECHANISED 1,000 TON HIGH-SPEED FORGING PRESS IN A SPECIAL STEEL PRODUCING WORKS. Oct 63.
Order from BISI £4 15s BISI-3307

Trans. of Stahl und Eisen (West Germany) 1963, v. 83 [no. 9] p. 526-532.

DESCRIPTORS: *Forge presses, *Steel industry

Kadinov, E. I. and Khitrik, S. I.
THE REDUCING STAGE IN THE ELECTRIC MELTING OF STAINLESS STEELS. Aug/Sep 63, 3600words
Order from HB $8.80 HB-5899

Trans. of Izvest[iya] V[ysshikh] U[chebynkh] Z[avedenii]. Chern[aya] Met[allurgiya] (USSR) 1963 [v. 6] no. 2, p. 68-76.

DESCRIPTORS: *Stainless steel, Melting, Electric furnaces, Chromium, Reduction (Chemistry), Slags.

Kalinnikov, E. S. and Samarin, A. M.
EFFECT OF REFRACTORY MATERIALS OF STEEL POURING DEVICES ON THE CONTENT OF NON-METALLIC INCLUSIONS IN STEEL. Apr 58 [7p] 7refs GKN Trans. no. 513; [BISI] Trans. no. 926; [DSIR] NLL M.4099.
Order from OTS or SLA $1.10 62-13210

Trans. of mono. [Trudy Sessii Akademii Nauk S.S.S.R. po Mirnomu Ispol'zovaniyu Atomnoi Energii, Zasedaniya Otdeleniya Tekhnicheskikh Nauk (Conference of the Academy of Sciences of the U.S.S.R. on the Peaceful Uses of Atomic Energy, Sessions of the Branch of Technical Sciences) Moscow] 1955, p. 3-27.

DESCRIPTORS: *Steel, *Refractory materials, Brick, Impurities, Slags, *Radiography, Chemical analysis.

From radiometric measurements the contents of non-metallic inclusions due to contamination of the liquid ball-bearing steel with the refractory material of the ladle lining were determined, as percentages of the total contents of inclusions, by separation by electrolyti solution and subsequent decomposition of carbides. Linings of chamotte, kaolin and high alumina bricks were investigated. High alumina brick produced the lowest percentage of exogenic inclusions. The oxygen content in ball-bearing steel increases 35-40% during tapping into a refractory lined ladle and then remains unchanged throughout pouring.

Kirvalidze, N. S. and Korobochkin, I. Ya.
SIMPLIFIED METHOD FOR TESTING THE PIERCING PROPERTIES OF METALS [Uproshchennyi Metod Ispytaniya Metalla na Proshivaemost']. 27 Aug 59 [13p] 6refs TIL Trans. no. 1517; BISI Trans. no. 1425; [DSIR] NLL M.4736.
Order from OTS or SLA $1.60 62-24235

Trans. of #Zavodskaya Laboratoriya (USSR) 1958 [v. 24] no. 7, p. 850-854.

DESCRIPTORS: *Pipes, *Steel tubing, Cylindrical bodies, Milling machines, Production, Electroslag process.

The new simplified method for testing the piercing properties of metal, involving the piercing of specimens of varying diameter in relation to length (i.e. stepped or conical specimens), makes it possible to determine comparatively easily under laboratory conditions the effect of various factors, such as metal quality and chemical composition, on the pierceability of steel. In addition, optimum heating temperatures prior to piercing are obtained. The simplicity and satisfactory degree of accuracy of the method described enable it to be recommended for use as a standard procedure for testing the piercing properties of alloy and high-alloy steels. (Author)

Leibenzon, S. A. and Tregubenko, A. F.
STEEL PRODUCTION BY THE ELECTROSLAG REMELTING METHOD. 2 Oct 63 [236p] 30refs JPRS: 21290.
Order from OTS $3.50 63-31866

Trans. of mono. Proizvodstvo Stali Metodom Elektroshlakovogo Pereplava, Moscow, 1962, 237p.

DESCRIPTORS: *Steel, *Industrial production, *Electroslag process, Electric furnaces, Slags, Mechanical properties, Microstructure, Alloys, Electrodes, Molding.

This book describes steel production by the process of electroslag remelting of consumable electrodes in a copper water-cooled ingot mold. Together with description of the electroslag unit designs, this account indicates the practical possibility of producting high alloy steel especially dense in microstruction and especially free of non-metallic inclusions by means of the technologically simple process of electroslag remelting.

Mäkelt, Heinrich.
GRAPHICAL METHOD FOR DETERMINING FORCES AND POWER REQUIREMENTS IN DRAWING BARS AND TUBES. [1962] [13p] 6refs [TIL] Trans. no. 1573; [BISI-1689].
Order from SLA $1.60 62-14662

Trans. of Industrie-Anzeiger (West Germany) 1959 [v. 81] no. 40, p. 28-31.

DESCRIPTORS: *Steel tubing, *Beams (Structural), Production, Drawing (Machine processing).

For abstract see Technical Translations 3: 793, 1960.

Maksimovich, G. S.
IMPROVED METHODS FOR MANUFACTURING HARD ALLOY TUBE DRAWING DIES. 15 Oct 58 [14p] 4refs TIL Trans. no. 1448; BISI Trans. no. 1076; [DSIR] NLL M.4073.
Order from OTS or SLA $1.60 62-24088

Trans. of Stal' (USSR) 1958, v. 18, no. 7, p. 629-633.

DESCRIPTORS: *Dies, *Drawing (Machine processing), *Pipes, Rods, Machines, Steel, Wear resistance.

The use of a combination press for hot stamping large-size drawing dies into holders, manufactured in high-carbon steels alloyed with chromium, vanadium and titanium, has made economically advantageous the use of hard alloy 25-80 mm diameter dies for drawing steel tubing and rod, resulting in a saving of 350,000 roubles per annum on expenditure on drawing tools. The use of new machines for lap grinding dies, has made it possible to completely replace centered dies by hard alloy drawing dies, resulting in a considerable

increase in drawing speeds. The high quality of Russian-produced tungsten-cobalt dies in alloy VK10 is confirmed by the exceptionally good wear resisting properties of these dies in drawing 51 mm diameter tubing. (Author)

Nishima, T.
EFFECT OF SOME ALLOYING ELEMENTS ON THE PROPERTIES OF BORON STAINLESS STEEL. Oct 63, 1300 words
Order from HB $4.55 HB-6029

Trans. of Tetsu to Hagane (Japan) 1962, v. 48, no. 11, p. 1496-1498.

DESCRIPTORS: *Stainless steel, *Boron alloys, Borides, Alloys, Hot working, Mechanical properties, Chemical analysis,

Orlov, S. I.
REDUCING THE SIZE OF THE CROP ENDS OF TUBES WHEN ROLLING ON CONTINUOUS MILLS. 21 Jul 58 [15p] TIL Trans. no. 1430; BISI Trans. no. 999; [DSIR] NLL M. 4083.
Order from OTS or SLA $1.60 62-24098

Trans. of Stal' (USSR) 1958, v. 18 [no. 4] p. 335-339.

DESCRIPTORS: Rolling mills, *Pipes, *Steel tubing, Production.

If billets are accurately centered, wall thickness variation in the ends of hot-rolled tubes is considerably reduced and, consequently, the amount of metal lost in end discards is also reduced. The shape of centres made by hot punching should be the same as those produced by drilling. The eccentricity of centres in 90 mm diameter billets should not exceed 4 mm. If the diameter of centres is increased from 25 mm to 31 mm and the depth from 5 mm to 40 mm, these changes effect only the distribution of circumferential defects in the front ends of tubes. With centres 5 mm. in depth and 25 mm in diameter circumferential internal defects occur chiefly at a distance of 60-80 mm from the front ends of tubes. These defects occur closer to the tube end if an increase is made in the diameter and depth of the centre. The use of elongated piercing plugs improves the quality of pierced tubes. The number of end defects occurring in the tube bore over a distance of above 140 mm is reduced twofold, and piercing time and unit electrical consumption used for piercing is reduced by approximately 10-11%. Elongated plugs are twice as durable as plugs of the old design. If rolls are replaced weekly then the internal surface quality of tubes is improved. (Author)

Plyatskovskii, O. A. and Pishchikov, G. P.
PREVENTING THE OCCURENCE OF PREMATURE CAVITATION IN THE PIERCING OF HIGH-ALLOY STEELS. 27 Jun 59 [15p] 5refs TIL Trans. no. 1507; BISI Trans. no. 1364; [DSIR] NLL M. 4724.
Order from OTS or SLA $1.60 62-24228

Trans. of Stal' (USSR) 1952 [v. 12] no. 4, p. 330-336.

DESCRIPTORS: *Steel tubing, *Pipes, *Stainless steel, Deformation, Stresses, Cavitation, Rupture, Rolling mills.

The rupture of the axial portion of the billet which occurs during piercing impoverishes the bore quality of the tubes produced, especially where these are being manufactured from stainless and other high-alloy steels. An increase in the length of the deformation zone of the inlet cone of the piercer rolls and the consequent increase in the number of periodic changes in the stress condition of the core of the billet increase the tendency for cavitation to occur. An increase in relative total reduction and slip and a decrease in the temperature to which the material is heated facilitate the rupture of the axial portion of the billet. The less the ductility of the steel at deformation temperatures, the greater is the tendency for a cavity to be produced. In order to reduce the possibility of cavitation occurring in the axial portion of the billet, recommendations are made. The rupture of the axial portion of the billet is due to the effect of normal and tangential stresses (shearing and tearing). One of the basic causes of the rupture of the core and the development of unfavourable conditions of stress is the considerable unevenness of deformation through the cross section of the workpiece. The use of three or more working rolls reduces the unevenness of deformation and the tendency for cavitation to be produced. (Author)

Schmidt, Fr.
BESSEMER CONVERTER, tr. by J. R.-P. 18 Jul 63, 2p (figs. omitted).
Order from OTS or SLA $1.10 63-23567

Trans. of German patent 1303, cl. 18, pat. from 19 Oct 1877.

DESCRIPTORS: *Bessemer process, Steel industry, Blast furnaces, Iron.

Skrebtsov, A. M.
RADIOISOTOPE STUDY OF THE OPEN HEARTH PROCESS. 1963, 150p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono. [Moscow, 1963, 136p].

DESCRIPTORS: *Steel industry, *Open hearth furnaces, *Radioactive isotopes, Dynamics, Crystallization, Melting.

Smirnov, V. S.
THE DEFORMATION PROCESS IN CROSS ROLLING. 14 May 59 [21p] 11refs TIL Trans. no. 1497; BISI Trans. no. 1311; [DSIR] NLL M. 4582.
Order from OTS or SLA $2.60 62-24224

Trans. of Stal' (USSR) 1947, v. 7, no. 6, p. 511-518.

DESCRIPTORS: *Steel, Deformation, Rolling mills, Rupture, Stresses, Cavitation.

Evidence is given in support of the theory that rupture in the core of the billet during cross rolling is caused by normal stresses, contrary to the theory that cavitation is caused by shearing stresses.

Teterin, P. K.
AN ANALYSIS OF EXISTING METHODS OF ROLL PROFILING FOR HOT AND COLD PILGER MILLS. 6 Nov 58 [18p] 17refs TIL Trans. no. 1449; BISI Trans. no. 1077; [DSIR] NLL M. 4072.
Order from OTS or SLA $1.60 62-24087

Trans. of Stal' (USSR) 1958 [v. 18] Rolling and Tube Manufacture Suppl, p. 227-242.

DESCRIPTORS: *Rolling mills, *Steel tubing, Manufacturing methods.

Tselikov, A. I. and Sarychev, A. A.
NEW MILL FOR THE MANUFACTURE OF WELDED TUBES WITH A HELICAL SEAM. 27 Dec 58 [16p] TIL Trans. no. 1398; [BISI] Trans. no. 828; [DSIR] NLL M. 3399.
Order from OTS or SLA $1.60 62-23966

Trans. of Stal' (USSR) 1955, v. 15 [no. 9] p. 815-820.

DESCRIPTORS: *Pipes, *Steel tubing, *Welding, Sheets, Coils, Arc welds.

Tsukanov, G. E.
TUBE BILLET MILL AT THE DZERZHINSKII PLANT. 24 Feb 59 [16p] 2refs TIL Trans. no. 1479; BISI Trans. no. 1219; [DSIR] NLL M. 4568.
Order from OTS or SLA $1.60 62-24211

Trans. of Stal' (USSR) 1958, v. 18 [no. 11] p. 1012-1017.

DESCRIPTORS: *Steel tubing, Production, Steel industry, Rolling mills.

Wiester, H.-J., Dahl, W., and Hengstenberg, H.
INFLUENCE OF THE ROLLING CONDITIONS, IN PARTICULAR OF THE FINAL ROLLING TEMPERATURE, ON THE MECHANICAL PROPERTIES AND NOTCH-TOUGHNESS OF PLAIN CARBON LOW-ALLOY STEELS. Oct 63.
Order from BISI £6 5s BISI-3245

Trans. of Stahl und Eisen (West Germany) 1952, v. 82 [no. 17] p. 1176-1186.

DESCRIPTORS: *Steel, Mechanical properties, Temperature, Rolling mills.

Winter, H. and Meckelburg, H.
RESEARCH ON THE ADHESIVE BONDING OF STEEL. [1963] [34p] (figs omitted) 10refs
Order from SLA $3.60 63-20346

Trans. of der Stahlbau (West Germany) 1961 [v. 30] no. 1, p. 16-23.

DESCRIPTORS: *Steel, *Bonding, Adhesives, Stainless steel, Surface properties, Mechanical properties.

The results of the investigations show that a successful adhesive bonding of steel is feasible. The knowledge and experiences gained in aluminum-bonding are applicable. However, different characteristics of material and other application procedures will add new factors. For example, the spraying with blasting corundum by the "Vacu-Blast" method can be regarded as a most effective pretreatment of adherend surfaces. Further investigations of strength characteristics led to the discovery of possibilities for dimensioning. In order to create as broad a base as possible for the use of joint materials and adhesives, we used the results obtained with adhesive joints for light metals. The plotting of reliable nomograms for particular cases is considerably facilitated by the use of the empiric measuring method discussed in this article. This is to make it possible for the construction engineer to exercise his judgment when he receives certain data in regard to adhesion properties and adhesive characteristics from the manufacturing firms. (Author)

Light Metals

Kolb, L.
PROCESS FOR THE PRODUCTION OF SINTERED MAGNESIUM OXIDE OF HIGH PURITY. Sep 63.
Order from TTIS $6.75 TTIS NS 137

Trans. of East German patent 25,494, appl. 18 Jun 59, pub. 29 Jun 63.

DESCRIPTORS: *Magnesium compounds, *Oxides, Purification, Sintering, Production

Vayna, A.
ELECTRICAL CONDUCTIVITY OF ALUMINUM ELECTROLYSIS BATHS ON THE BASIS OF FUSED CRYOLITE. [1963] [25p] 4refs
Order from SLA $2.60 63-20451

Trans. of Alluminio (Italy) 1950, v. 19, p. 215-224.

DESCRIPTORS: *Cryolite, Fused materials, *Aluminum, Industrial production, Electrolysis, Electrical conductance.

It is shown that the conductivity of the cryolite, , at constant temperature, decreases linearly with increasing Al_2O_3 content. From this fact one can deduce that the Al_2O_3 functions as an undissociated inert solvent for the cryolite, which is the completely dissociated solute to which the electrical conductivity of the fused mixture is due. (Author)

Vayna, A.
VISCOSITY OF ALUMINUM ELECTROLYSIS BATHS ON THE BASIS OF FUSED CRYOLITE. [1963] [41p] 2refs
Order from SLA $4.60 63-20458

Trans. of Alluminio (Italy) 1950, v. 19, p. 133-145.

DESCRIPTORS: *Cryolite, Fused materials, *Aluminum, Industrial production, Electrolysis, Viscosity,

From viscosity measurements it is shown that in neutral and calcium baths the rates of fall of Bayer alumina are smaller than in acidic and alkaline baths.

In acidic and alkaline baths the rates of fall vary greatly. From furnace practice however it is shown that acidic baths "do not hold alumina," i.e. in them the alumina falls more readily than in the other types. The fall of the Al_2O_3 in the baths of industrial furnaces does not take place according to a simple scheme to which one can apply completely the formulas which we derived. In the first place there exists, according to the temperature and composition of the bath, and for each type of alumina, a different absorption capacity with respect to the cryolite bath. The alumina which is difficultly impregnated by the fused bath remains on the surface of the furnace longer and is resolved into its particles according to their order of magnitude. A little air remains absorbed on groups of several particles, which become larger and lighter and therefore fall more slowly. Alumina which is easily wetted by the cryolite fusion experiences the opposite fate. The surface tension of the bath and the alumina-bath-air interfacial tension govern these absorption phenomena, which in general alter the simple laws of theoretical fall. (Author)

Zamotorin, M. I.
DIAGRAM OF STATE OF ALLOYS OF CALCIUM WITH LITHIUM. [1963] 8p (figs omitted)
Order from K-H $8.00 K-H 5866 b

Trans. of Metallurg [Leningrad] (USSR) 1938, v. 13, no. 1, p. 96-99.

DESCRIPTORS: *Lithium alloys, *Calcium alloys, Alloys, Metallurgy.

Nonferrous (except light) Metals

Batulin, G. I. and Tkachenko, M. S.
ON THE QUESTION OF NITRIDING OF MANGANESE. [1963] 6p 5refs
Order from OTS or SLA $1.10 63-20130

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. [Chernaya Metallurgiya] (USSR) 1962, no. 11, p. 76-79.

DESCRIPTORS: *Manganese, *Hardening, Particle size, Ammonia, Reaction kinetics, Metallography, Phase studies.

Investigation of the influence of manganese metal particle size, temperature and feed gas velocity on the course of the nitriding process in a stream of ammonia has shown that feed gas velocity, under conditions of these tests, has no effect on the reaction rate. A relation between manganese particle size and the gain in charge weight was developed. It was shown that the rate of nitriding reaction at 830° C. is approximately twice as great as at 650° C.

Goroshchenko, Ya. G. and Andreeva, M. I.
THE RECOVERY OF NIOBIUM AND TANTALUM FROM INTERMEDIATE PRODUCTS OF THE PROCESSING OF LOPARITE, PEROVSKITE AND SPHENE. [1963] 15p Warren Spring Lab. Trans. NT. 781; [DSIR] NLL M. 3699.
Order from OTS or SLA $1.60 63-23398

Trans. of Sbornik Trudov po Khimicheskoi Tekhnologii Mineral'nogo Syr'ya Kol'skogo Poluostrova (USSR) 1959, v. 1, p. 129-147.

DESCRIPTORS: *Niobium, *Tantalum, Oxides, Niobium compounds, Tantalum compounds, *Minerals, Separation,

Topics include the recovery of $NH_4NbO(SO_4)_2$ from a mixture of niobium pentoxide and titanium dioxide; the recovery of $(NH_4)_3Nb(SO_4)_4$ from a mixture of niobium and titanium; the recovery of $NH_4NbO(SO_4)_2$ from a mixture of niobium and tantalum pentoxides; the recovery of $(NH_4)_3Nb(SO_4)_4$ from a mixture of niobium and tantalum pentoxides; the recovery of $6(NH_4)_2SO_4 \cdot Ta_2(SO_4)_5 \cdot 2(TaO)_2(SO_4)_3$ from a mixture of tantalum and niobium pentoxides; the removal of titanium dioxide from intermediate products; a system for the recovery of niobium pentoxide and tantalum concentrate; and weight balance experiments on the separation of niobium and tantalum.

Structural Metallurgy and Corrosion

Bauer, C. O.
CORROSION-RESISTANT FASTENERS, PT. 4. [1963]
Order from BISI £7 BISI-3150

Trans. of Draht-Welt (West Germany) 1962, v. 48, Oct, Suppl. p. 123-135.

DESCRIPTORS: *Fastenings, *Corrosion inhibition, Chromium alloys, Nickel alloys, Mechanical working

Buchholtz, Herbert and Pusch, Richard.
CONTRIBUTION TO TRANSCRYSTALLINE STRESS FISSURE CORROSION OF STEEL (Beitrag zur Transkristallinen Spannungsrisskorrosion von Stahl). [1963] [34p] (foreign text included) 8refs
Order from SLA $3.60 63-20155

Trans. of Stahl und Eisen (Germany) 1942, v. 62, no. 2, p. 21-30 (Verein Deutscher Eisenhüttenleute. Bericht-568).

DESCRIPTORS: *Steel, *Corrosion, *Hydrocyanic acids, Fracture (Mechanics), Stress, Crystals, Corrosion inhibition, Aluminum coatings, Zinc coatings, *Gas cylinders.

An investigation was made of hydrocyanic acid as an essential cause of transcrystalline stress fissure corrosion in pressure gas bottles. Research on the influence of the concentration and time of action of hydrocyanic acid solution of load, heat treatment, plastic deformation and surface constitution of steel, type of steel, and type of attacking solution on stress fissure corrosion was conducted. Elimination of stress fissure corrosion through protective coatings of zinc or aluminum and the proposed interpretation of the process of stress fissure corrosion were investigated. (Author)

Dvorak, A.
EFFECT OF MECHANICAL LOADING ON THE CORROSION OF STEEL IN A LIQUID LEAD-BISMUTH ALLOY. Oct 63.
Order from BISI £5 10s BISI-3364

Trans. of Strojirenstvi (Czechoslovakia) 1962, v. 12 [no. 1] p. 39-43.

DESCRIPTORS: *Bismuth alloys, *Lead alloys, Liquid metals, *Steel, *Corrosion, Loading (Mechanics), Stresses

Geller, Yu. A.
THE INFLUENCE OF PLASTIC DEFORMATION ON STRUCTURE AND PROPERTIES. Oct 63
Order from BISI £4 15s BISI-3164

Trans. of mono. Instrumental'nye Stali (Tool Steels) [Moscow] 1955, p. 248-260.

DESCRIPTORS: *Tool steel, Structural properties, *Plasticity, Deformation.

Kagan, D. Ya. and Kaganer, T. A.
PHOSPHATE DOSING OF BOILER WATER [O Fosfatnom Rezhime Kotlovoi Vody]. [1963] [10p] 9refs C. E. Trans. 3011.
Order from OTS or SLA $1.10 63-23975

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 9, p. 58-62.
Another trans. is available from OTS or SLA $1.60 as 63-15698, 16p (foreign text included).

DESCRIPTORS: *Corrosion, Boilers, Steam, *Boiler tubes, *Feed water, Corrosion inhibition, Films, *Sodium compounds, *Phosphates, Hydrogen.

The hydrogen content of the steam in natural-circulation boilers is investigated as a function of the phosphate treatment of the boiler water. The results of experiments with high-duty boilers are described. Recommendations are given for experimental treatment, without using phosphate, in one of the regional power stations. (Author)

Mednikov, Yu. A. and Strizhak, G. K.
AN ELECTROSTATIC METHOD FOR PAINTING AND OILING TUBES. 8 Oct 58 [9p] TIL Trans. no. 1447; BISI Trans. no. 1074; [DSIR] NLL M. 4074.
Order from OTS or SLA $1.10 62-24089

Trans. of #Metallurg (USSR) 1958, v. 3 [no. 5] p. 30-34.

DESCRIPTORS: *Pipes, *Paints, *Bituminous coating, *Corrosion inhibition, Protective treatments, Electrostatic fields, Sprays, Solvents, Pipe fittings, *Electrodeposition.

Anti-corrosive and decorative finishes can be effectively applied to several tubes, traveling in parallel series, in a field of electric discharge. The best arrangement of the sprayers, the electrode grills and the workpieces is such that the distance from the electrode grills to the tubes is between 200-300 mm and a distance of 100-200 mm separates the individual tubes. The central tube should be not more than 400-500 mm from the electrode grill. The quality of surface of the tube prior to spraying has little effect on the adhesive strength of bitumen coatings. Benzine, naphthol or a mixture of naphthol and xylol (dimethyl benzine) used as solvent produce an extremely uniform pointed surface and ensures that the coating will dry rapidly. The process can be applied to connecting pipes, T-pieces and other products with internal threads where the internal surfaces of the pieces do not require any joint coating.

Patzak, Ingeborg.
THE STRUCTURE AND POSITION OF THE PHASES IN THE SYSTEM COPPER-TELLURIUM. [1963] 4p. (figs. tables omitted).
Order from SLA $1.10 63-18453

Trans. of Z[eitschrift für]Metallk[un]de (West Germany) 1956, v. 47, p. 418-420.

DESCRIPTORS: *Copper, *Tellurium, *Phase studies, Copper compounds, Tellurides, Chemical reactions,

Pavlov, I. M. and Mezis, V. Ya.
THE MICROSTRUCTURE OF METAL AS A FUNCTION OF THE CHANGE OF THE SIGN OF PLASTIC DEFORMATION (Zevisimost' Mikrostruktury Metalla ot Izmeneniya Znaka Plasticheskoi Deformatsii) tr. by L. Meyer. Feb 62 [8]p. 8 refs. S.M.R.E. Trans. no. 4665; [DSIR] NLL M. 3723.
Order from OTS or SLA $1.10 63-19828

Trans. of Akad[emiya Nauk SSSR. Inst[itut] Metallurgii. Trudy, 1960, no. 5, p. 127-132.

DESCRIPTORS: *Deformation, Plasticity, Metals, *Microstructure, Grain structures (Metallurgy), Copper, Mechanical properties, Crystal lattices, Crystal-lattice defects.

The structure of metal subjected to preliminary alternating deformation differs from its structure after constant plastic deformation by having a series of special characteristics: there is no elongated (fibrous) structure; the shape of the grains (with equal magnitudes for straight and reverse deformation) resembles the grain shape of non-deformed metal (original state); mutually intersecting slip lines are observed: the final picture intra-granular deformation of the metal and only slight inter-granular displacements. This difference in microstructure is explained by the effect of the "geometrical factor" of deformation. The sharp difference in microstructure found in the investigated metals after alternating and constant plastic deformation is independent, in a series of instances, of the fundamental difference in mechanical properties (copper). Cold hardening of metal with alternating plastic deformation is not accompanied by noticeable external changes in structure. Strengthening of metal (cold hardening) as a result of cold deformation, irrespective of its sign, is never connected with noticeable external changes in structure (fibrous structure) but with deep-seated changes in the structure of the metal (distortion of the crystal lattice, dislocations, etc.). (Author)

Pavlovic, Z. and Markovic, T.
IRON AS A MULTIPLE ELECTRODE. [1963] 10p
Order from ATS $8.85 ATS-47Q72G

Trans. of Werkstoffe und Korrosion (West Germany) 1963, v. 14, no. 6, p. 458-464.

DESCRIPTORS: *Electrodes, *Iron.

Petrosyan, R. A.
THE EFFECT OF THE WALL TEMPERATURE OF THE REAR SURFACES OF BOILERS ON CORROSION BY FLUE GASES. 1 Jul 58 [14p] 8refs TIL Trans. no. 1426; BISI Trans. no. 984; [DSIR] NLL M. 4087.
Order from OTS or SLA $1.60 62-24102

Trans. of Teploenergetika (USSR) 1957, v. 4, no. 12, p. 16-20.

DESCRIPTORS: *Boilers, Boiler tubes, Steel, Surface temperature, *Corrosion, *Corrosive gases, Exhaust gases, Analysis

Testing procedures and results are presented relating to the calculation of corrosion rates for gas-swept steel tubes at various wall temperatures. (Author)

Ranucci-Gatto, L.
THE POSSIBLE INFLUENCE OF BACTERIAL METABOLISM ON THE CORROSION OF ALUMINUM BY STAGNATING WATER: PRELIMINARY STUDIES. [1963] 21p. 12 refs.
Order from SLA $2.60 63-18714

Trans. of Alluminio (Italy) 1954, v. 23, no. 4, p. 399-411.

DESCRIPTORS: *Aluminum, Corrosion, *Bacteria, *Vibrio, Metabolism, Carbon, Oxygen, Hydrogen, Nitrogen, Sulfur, Iron, *Water supplies.

A survey is made of current knowledge concerning: the corrosion of Al in water; general aspects of bacterial corrosion; the bacterial content of drinking water; and, microbic actions in the carbon, oxygen, hydrogen, nitrogen, sulfur, and iron cycles. Details are given of preliminary studies involving the corrosive action of normal and sterile drinking water, of bacteria taken from corroded Al vessels, of the most common bacteria found in drinking water, and of bacteria known to influence the corrosion of other metals. It was established that Vibro desulfuricans, which is active on other metals, is not involved in the corrosion of Al. The findings of the other experiments are not considered conclusive.

Se, Ui-yu and Turkovsaya, A. V.
CORROSION OF COPPER NICKEL ALLOYS IN SEA WATER. [1963] [7p] 5refs C. E. Trans. 2805.
Order from OTS or SLA $1.10 63-24085

Trans. of [Izvestiya Vysshikh Uchebnykh Zavedenii]. Tsvetnaya Metallurgiya (USSR) 1961, v. 4 [no. 4] p. 145-148.

DESCRIPTORS: Sea water, *Nickel alloys, *Copper alloys, *Corrosion.

A study was made of the corrosion and electrochemical behaviour of copper nickel alloys in sea water. It is shown that when the alloy contains about 20% of nickel a resistance threshold is exhibited and at this point the properties of the alloy change abruptly. Measurement of the potentials of cleaned specimens shows that the occurrence of a resistance threshold is the result of an increase in the degree of passivation of the alloy. (Author)

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

RESEARCH ON THE TREATMENT OF WATER AND RADIOACTIVE RESIDUES. Quarterly rept. 11, 1 Oct-31 Dec 62, on Contract 048-61-4 RDB. [1963] [36]p.
Order from OTS or SLA $3.60 EURAEC-518

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n. d.

DESCRIPTORS: *Water supplies, *Radiological contamination, Decontamination, *Radioactive waste, Disposal.

Bisson, André and Frisby, Henri.
ELECTRON MICROSCOPE STUDY OF POROSITIES, CARBON INCLUSIONS AND DISLOCATIONS IN HOT-PRESSED BERYLLIUM OXIDE. [1962] [24p] 7refs CENS DM/949.
Order from OTS or SLA $2.60 AEC-tr-5028

Trans. of a rept. from Centre d'Études Nucléaires de Saclay (France) Jan 61.

DESCRIPTORS: Oxides, *Beryllium compounds, Crystal lattice defects, Inclusion (Metallurgy), Carbon, Porosity, Electron microscopes.

Hot-pressed beryllia was studied by the examination of fracture replicas under the electron microscope. In addition to the pores that remain after sintering, cavities or bubbles are formed during long thermal treatments in air. It is suggested that these bubbles are produced by the oxidation of impurities enclosed in the specimens. Before the thermal treatments, carbon precipitates are actually found along the dislocation lines. An independent study shows a correlation between dislocation arrangements, the carbon precipitates and the formation of bubbles. (Author)

Bouissières, G.
ACTINIUM, tr. by H. W. Kirby. AEC Research and Development Rept. 7 Feb 63, 29p 116refs [NASA N63-13419]
Contract no. AT-33-1-GEN-53
Order from OTS $0.75 MLM-1147(Tr)

Trans. of Nouveau Traité de Chimie Minérale [sic] (France) 1960, v. 7, p. 1413-1446.

DESCRIPTORS: *Actinium, *Radioactive isotopes, Radioactivity, Radioactive series, Radioactive decay, Nuclear properties, Uranium, Thorium, *Actinium compounds.

A general survey which includes the following topics: Isotopes and nuclear properties; Natural occurrence; History of investigations, preparation; Electrolytic deposition; Physical, chemical, and physiological properties; Analytical data; Actinium compounds.

Eicher, Hermann.
HYPERFINE STRUCTURE OF NUCLEAR ENERGY LEVELS IN THE ION CRYSTALS OF RARE EARTHS. [1963] 38p 34refs
Order from SLA $3.60 63-20355

Trans. of Zeitschrift für Physik (West Germany) 1962, v. 169, 178-197.

DESCRIPTORS: *Hyperfine structure, *Rare earths, Ions, Crystals, *Nuclear energy levels, Electrons, Nuclei, Crystal lattice, Relaxation time, Nuclear moments

Topics include: the Hamilton operator for the interaction of the nuclear moments with the electron system; the interaction between electrons and crystal field; interaction of the electrons with the nucleus; the quantitative partitioning of the nuclear energy level in the case of a general multipole interaction between the nucleus and the electron system; the partitioning of the nuclear energy levels for short electron-lattice relaxation times; the mean value of a magnetic multipole operator; the mean value of an electrical multipole operator; and the partitioning of the hyperfine structure of the oxide crystals of the rare earths.

Glauberman, A. E. and Tal'yanskii, I. I.
DISTRIBUTION OF NEUTRONS IN MEDIA WITH PREASSIGNED PROPERTIES AT A CYLINDRIC BOUNDARY OF SEPARATION. [1963] 8p. 3 refs.
Order from OTS or SLA $1.10 63-18888

Trans. of #Atomnaya Energiya (USSR) 1957, v. 3, no. 7, p. 23-27.

DESCRIPTORS: *Neutrons, *Fast neutrons, *Thermal neutrons, Distribution, *Neutron flux, Neutron scattering, Cylindrical bodies, Boundry layer, Groups (Mathematics), *Well logging.

Solution of the problem of the distribution of neutrons, from a point source, in a cylindrically symmetric medium, divided into two regions with different neutron properties was made. The two-group approximation, using the method of fictive neutron sources, introduced at the boundary of media separation was utilized in making the calculation. Expressions for fast and slow neutron fluxes in both media are produced. (Author)

Kurnosova, L. V., Razorenov, L. A., and Fradkin, M. I.
THE INVESTIGATION OF THE NUCLEAR COMPONENT OF COSMIC RAYS ON THE THIRD COSMIC ROCKET. [1963] [5p] 2refs
Order from OTS or SLA $1.10 63-20397

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1961, v. 8, p. 87-89.

DESCRIPTORS: *Cosmic rays, *Sounding rockets, Nuclear properties, Radiation measurement systems, Analysis.

The nuclear component of primary cosmic rays is investigated by a Cherenkov counter on the third cosmic rocket. The experiment and results are discussed. (Translator)

Siewet, G.
PROCESS FOR THE DECONTAMINATION OF RADIOACTIVELY CONTAMINATED ARTICLES AND SURFACES. Sep 63.
Order from TTIS $10.00 TTIS NS 136

Trans. of East Germany patent 24,843, appl. 16 May 60, pub. 5 Mar 63.

DESCRIPTORS: Surfaces, *Radiological contamination, Decontamination

Nuclear Engineering and Power

CORROSION PROBLEMS. Quarterly rept. no. 1, 1 Mar-31 May 60. [1963] 48p 3refs
Order from OTS or SLA $4.60 EURAEC-29

Trans. of a rept. from Centre Belge d'Étude de la Corrosion, Brussels; Centre d'Étude de l'Energie Nucléaire, Brussels (Belgium); Société d'Études, de Recherches et d'Applications pour l'Industrie, Brussels (Belgium) Jun 60.

DESCRIPTORS: *Reactor materials, *Corrosion, Electrochemistry, Temperature.

SOVIET RESEARCH REACTOR RFT: SUMMARY OF DATA. Rept. no. 9 on AID Work Assignment no. 31. 2 Aug 63 [18p] 5refs AID Rept. P-63-103.
Order from OTS or SLA $1.60 63-23756

DESCRIPTORS: *Nuclear reactors, Graphite-moderated reactors, Reactor cores, Reactor reflectors, Reactor fuel elements, Reactor operation, Tests, Design, *Research reactors, Reactor control, Reactor lattice parameters

The report presents a detailed description of the RFT research reactor. The presentation includes background information, design features, reactor parameters, and information on experimental facilities afforded by the reactor, together with illustrations and diagrams. (AID abstract)

Gebhardt, E., Segezzi, H.-D., and Durrschnabel, W.
STUDY OF THE ZIRCONIUM-OXYGEN SYSTEM. PT. I. THE ELECTRICAL RESISTANCE OF OXYGEN-BEARING ZIRCONIUM. [1963] 15p
Order from ATS $16.40 ATS-00Q72G

Trans. of J[ournal of] Nucl[ear] Mater[ials] (Netherlands) 1961, v. 4, no. 3, p. 241-254.

DESCRIPTORS: *Zirconium compounds, Oxygen, Resistance (Electrical), Reactor materials.

Kalafati, Dmitrii Dmitrievich.
THERMODYNAMIC CYCLES OF ATOMIC POWER STATIONS WITH AN MHD GENERATOR. 27 Sep 63, 4p JPRS: 21241.
Order from OTS $0.50 63-31837

Trans. of mono. Termodinamicheskie Tsikly Atomnykh Elektrostantsii (Thermodynamic Cycles of Atomic Power Stations) Moscow/Leningrad, 1963, p. 251-254.

DESCRIPTORS: *Magnetohydrodynamics, *Generators, Electric power production, *Thermodynamics, *Nuclear power plants, Plasma physics, Thermoelectricity, Thermonuclear reactions,

The principle of the magnetohydrodynamic (MHD) generator is that at high temperatures, on the order of 2,500 to 3,000°K, gases approximate the status of a plasma and conduct electricity. Addition of approximately one percent cesium or sodium vapor to the heated gas supplements the electric conductivity of the stream. If this gas flows at high speed from the nozzle into a powerful magnetic field an E. M. F. arises in the stream of gas as in any given conductor, and an electric current may be drawn off through electrodes located within the nozzle. A diagram of the principle of operation, and a graph of the thermodynamic cycle of a nuclear power installation utilizing an MHD generator operating with inert gas are shown.

Mansard, B. and Rousset, P.
STUDY OF URANIUM MONOCARBIDE SHAPING AND IRRADIATION. Quarterly rept. no. 2, 15 Mar-15 Jun 61. [1963] 24p Contract 012-60-5 RDF (3748)
Order from OTS or SLA $2.60 EURAEC-125

Trans. of a rept. from Commissariat à l'Énergie Atomique, Paris (France) n. d.

DESCRIPTORS: *Reactor fuels, *Uranium compounds, *Carbides, Forging, Sintering, Extrusion, Radiation effects.

(See also EURAEC-71)

Mansard, B. and Rousset, P.
STUDY OF URANIUM MONOCARBIDE SHAPING AND IRRADIATION. Final rept., 15 Dec 60-15 Dec 61. [1963] 32p Contract 012-60-5 RDF (3748)FR
Order from OTS or SLA $3.60 EURAEC-496

Trans. of a rept. from Commissariat à l'Énergie Atomique, Paris (France) 30 Sep 62.

DESCRIPTORS: *Reactor fuels, *Uranium compounds, *Carbides, Forging, Sintering, Extrusion, Radiation effects.

(See also EURAEC-477)

Verkhovskii, B. I.
THE USE OF RADIOACTIVE ISOTOPES FOR CHECKING PRODUCTION PROCESSES. 1963, 84p
Order from PP $3.75

Trans. of mono. [Primenenie Radioaktivnykh Izotopov dlya Kontrolya Proizvodstvennykh Protsessov, Moscow, 1959, 82p].

DESCRIPTORS: *Radioactive isotopes, Industrial radiography, Radiation measurement systems components, Penetration, Scattering, Ionization, Neutrons, Sources, *Nuclear industrial applications,

PHYSICS

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 327 (PHYSICS AND MATHEMATICS SERIES). 22 Oct 63, 9p JPRS: 21545.
Order from OTS $0.50 63-31982

Consists of abstracts of articles from selected scientific and technical journals of Czechoslovakia and East Germany.

DESCRIPTORS: *Abstracts, *Physics, *Mathematics, Czechoslovakia, East Germany, *Nuclear energy, Functions, Topology, Groups (Mathematics), Gravity, Graphic analysis, Neutrons, Probability, Nuclear power plants, Thermodynamics, Fission products, Reactor fuels processing, Radiochemistry, Scintillation counters, Radioactivity, Radiobiology, Labeled substances,

SOVIET PHYSICS-DOKLADY, VOL. 7, NO. 10, P. 869-963 (PHYSICS SECTIONS). Apr 63, 1v.
Order from AIP $4.00, $35.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 146, no. 4, p. 782-[812] 925-[932]; no. 5, p. 1039-[1063] 1068-[1070] 1189-[1200]; no. 6, p. 1305-[1317] 1322-[1326] 1426-[1433].

DESCRIPTORS: *Physics, Crystal structure, Mathematics, Metallography, Biophysics, Periodicals, Gas flow, Electron diffraction analysis, Nuclear magnetic resonance, Electromagnetic fields, Convection, Nuclear physics, Energy conversion, Relativity theory, Metal films, Clouds, High pressure research, Green's function, Internal friction, Solid state physics, Nuclei, Field theory, Magnetic fields, Radioactive decay, Superconductivity, Crystal lattice defects, Adhesion, Fatigue (Mechanics), Surface properties, Radioprotective agents, Insulin, Cancer, Color vision, Muscle proteins, Enzymes, Radiation injuries,

SOVIET PHYSICS-DOKLADY, VOL. 7, NO. 11, P. 967-1063 (PHYSICS SECTIONS). May 63, 1v.
Order from AIP $4.00, $35.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 147, no. 1, p. 57-[91] 96-[98] 217-[220]; no. 2, p. 331-[352]; no. 3, p. 562-[603] 727-[730].

DESCRIPTORS: *Physics, Astronomy, Crystal structure, Mathematics, Mechanics, Continuum mechanics, Metallurgy, Elasticity, Biophysics, Periodicals, Planets, Cadmium compounds, Bromides, Diffusion, Scattering, Polynomials, Gyroscopes, Turbulence, Solid state physics, Magnetohydrodynamics, Charged particles, Iodine, *Quantum mechanics, *Field theory, Spin, Single crystals, Plasma physics, Absorption spectrum, Line spectrum, Benzenes, Magnetic fields, Polymers, Mossbauer effect, Vector analysis, Radiation damage, Nuclear

magnetic resonance, Shock waves, Transformations (Mathematics), Corrosion, Fatigue (Mechanics), Functions, Radiation injuries, Plants (Botany),

SOVIET PHYSICS-DOKLADY, VOL. 8, NO. 2, P. 119-222 (PHYSICS SECTIONS). Aug 63, 1v
Order AIP $4.00, $35.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 148, no. 4, p. 782-825; no. 5, p. 1046-1072, 1199-1204; no. 6, p. 1268-1305, 1403-1404. Other translations of p. 810-813 and 1199-1201 are available from OTS $0.50 ea. as 63-31269, JPRS-20148 and in 63-31393, JPRS-20375.

DESCRIPTORS: Periodicals, *Physics, Astrophysics, Crystal structure, Control theory, Cybernetics, Fluid mechanics, Mathematics, Elasticity, Biophysics.

SOVIET PHYSICS-DOKLADY, VOL. 8, NO. 3, P. 227-324 (PHYSICS SECTIONS). Sep 63, 1v.
Order from AIP $4.00, $35.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 1, p. 52-[89] 194-[197]; no. 2, p. 284-[311] 438-[441]; no. 3, p. 546-[583] 586-[588] 717-[720].

DESCRIPTORS: *Physics, Astronomy, Cybernetics, Control, Electrical engineering, Fluid mechanics, Mathematics, Mechanics, Continuum mechanics, Solid state physics, Elasticity, Biophysics, Periodicals Venus, Game theory, Probability, Operators (Mathematics), Numerical analysis, Partial differential equations, Nonlinear systems, Magnetohydrodynamics. Wave transmission, Gas diffusion, Structural parts, Gravity, Gyroscopes, Anisotropy, Entropy, Electromagnetic waves, Scattering, Polynomials, Viscosity, Polymers, Oscillation, Tensor analysis, Quantum statistics, Lasers, Chlorophyll, Phosphorescence, Liquefied gases, Excitation, Crystal lattice defects, Semiconductors, Glass, Deformation, Exposure, Magnetic fields, Adaptation (Physiology),

SOVIET PHYSICS-DOKLADY, VOL. 8, NO. 4, P. 329-424 (PHYSICS SECTIONS). Oct 63, 1v.
Order from AIP $4.00, $35.00/year

Trans. of Akademiya Nauk SSSR. Doklady, 1963, v. 149, no. 4, p. 796-[824] 831-[834] 973-[975]; no. 5, p. 1043-[1063] 1187-[1196]; no. 6, p. 1278-[1311] 1428-[1435].

DESCRIPTORS: *Physics, Aerodynamics, Crystals, Electrical engineering, Fluid mechanics, Mathematics, Mechanics, Continuum mechanics, Elasticity, Biophysics, Periodicals, Gas flow, Mechanical waves, Electrical networks, Detonations, Functions, Tensor analysis, Anisotropy, Chlorophylls, Indium, Plasma physics, Plasma oscillations, Magnetic fields, Matrix algebra, Diffusion, Thermal diffusion, Phosphorescence Electromagnetic fields, Shock waves, Single crystals, Deformation, Metals, Metal plates, Structural shells, Plasticity, Cylindrical bodies, Oleic acids, Bone marrow, Radiation injuries, Polymers, Luminescence, Proteins,

Buravtsev, A. I.
PROPAGATION OF ELASTIC-PLASTIC LOAD WAVE IN A ROD OF FINITE LENGTH. 19 June 63 [12]p. 4 refs. FTD-TT-63-506.
Order from OTS or SLA $1.60 63-23731

Unedited rough draft trans. of Leningrad U. Vestnik (USSR) 1963 [v. 18] no. 1 [Seriya Matematiki, Mekhaniki i Astronomii, no. 1] p. 79-85.

DESCRIPTORS: *Mechanical waves, Sound, Oscillation, Elasticity, Plasticity, *Propagation, *Rods, Deformation, Equations, Mathematical analysis.

With the rise in the number of reflections speed of sound decreases, which indicates a rise in deformation. The zones of interaction of incident and reflected waves become extended, and the time of their interaction increases. Speed of sound turns into zero on the right or on the left ends of the rod after a final number of reflections, provided $\frac{a_1}{a_0} = (\frac{a-1}{n})^2$, $n = 1, 2, 3 \ldots$ In this case the interaction time is infinitely long. Recurrence formulas determine the magnitude of deformation in any given section of the rod at any given moment of time, consequently, the problem of determining the state of the rod is solved. If to the end of the rod is imparted a velocity, changing in accordance with the law $v_0 = f(t)$, guaranteeing the absence of a unloading wave, then in this case the simple wave is conjugated with the reflected wave. (Author)

Chertov, A. G.
UNITS OF MEASUREMENT OF PHYSICAL QUANTITIES. 1963, 190p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Edinitsy Izmereniya Fizicheskikh Velichin, Moscow, 1960, 180p].

DESCRIPTORS: Measurement, *Physical properties, Mechanics, Acoustics, Molecular properties, Electromagnetism, Electromagnetic waves.

Heide, Hans Günther.
ELECTRON MICROSCOPY OF OBJECTS UNDER ATMOSPHERIC PRESSURE OR UNDER PRESSURES WHICH PREVENT THEIR DRYING OUT (Elektronenmikroskopie von Objekten unter Atmosphärendruck oder unter Drucken, Welche ihre Austrocknung Verhindern). [25 Apr 63] [17]p. 6 refs.
Order from SLA $1.60 63-18382

Trans. of die Naturwissenschaften (West Germany) 1960, v. 47, no. 14, p. 313-317.

DESCRIPTORS: *Electron microscopy, Pressure, Barometric pressure, *Carbon, *Radiation effects, *Degradation, *Contamination, Electron microscopes.

Rost, Berthold.
[LEAD CATHODE CELL]. [1963] 4p
Order from SLA $1.10 63-18207

Trans. of mono. (letter) to George Calingaert, Detroit [Mich.] from Berthold Rost, Ludwigshafen am Rhein [Germany] 5 Mar 50.

DESCRIPTORS: *Cathodes (Electrolytic cell), *Sodium alloys, *Lead alloys, Design.

Shaskol'skaya, M. P. and El'tsin, I. A.
SELECTED PROBLEMS IN PHYSICS WITH ANSWERS. 1963, 1v
Order from PP $3.75

Trans. of mono. [Sbornik Izbrannykh Zadach po Fizike, Moscow, 1959, 207p].

DESCRIPTORS: *Physics, Theory, Statics, Mechanics, Optics, Electricity.

Verkin, B., Galkin, A., and Dmitrenko, I.
COSMIC COLD (HORIZONS OF SCIENCE). 12 June 63 [7]p. FTD-TT-63-513.
Order from OTS or SLA $1.10 63-23734

Unedited rough draft trans. from Izvestiya (USSR) 1960, 2 Nov, p. 6.

DESCRIPTORS: *Cryogenics, *Low temperature research, Liquefied gases, Metals, *Superconductivity, Physical properties, Mechanical properties, Astronautics.

A popularized account concerning the technological applications of superconductivity and other cryogenic phenomena.

Vries, Louis de and Clason, W. E., comps.
PURE AND APPLIED PHYSICS: GERMAN-ENGLISH DICTIONARY. Dec 63, 1v.
Order from American Elsevier Publishing Co., Inc., 52 Vanderbilt Ave., New York, 17, N. Y. $9.95

DESCRIPTORS: *Physics, *Applied physics, *Dictionaries.

Electricity and Magnetism

Dorfman, Ya. G.
DIAGMAGNETISM AND THE CHEMICAL BOND. 1963, 230p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, D. C.

Trans. of Russian mono. [Diamagnetizm i Khimicheskaya Svyaz', n.p., 1961, 231p].

DESCRIPTORS: *Magnetic properties, *Chemical bonds, Absorption, Crystals, Molecules, Tables.

Nekrasov, Z. I. and Chekin, V. V.
ACTION OF ALTERNATING MAGNETIC FIELD ON A "BOILING" LAYER OF FERROMAGNETIC PARTICLES. [1963] 6p
Order from OTS or SLA $1.10 63-20249

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie Tekhnicheskikh Nauk]. Izvest[iya]: Metallurgi[ya] i Toplivo, 1961, no. 6, p. 25-29.

DESCRIPTORS: *Magnetic fields, *Ferromagnetic materials, Boiling, Pipes, Nitrogen, Bubbles, Ores (Metal sources), Electromagnets, Tests,

Action efficiency of the magnetic field on the boiling layer structure of ferromagnetic particles was investigated in the case of concentrate from the Kerche ore, enriched by roasting and magnetism, and of which the iron containing part is mainly magnetite. The experiments were carried out in asbestos-cement pipe with internal diameter of 100 mm. Conversion of immobile layer to "boiling" state occurred by compressed nitrogen. The magnetic field was created by three couples of electromagnetics with 300 mm. long cores. It was found that a most regular boiling occurs in a magnet field, having the smallest gradient along the height of boiling layer, while at strong heterogeneity of magnetic field bubbles and pistons remain and entrainment increases. Visual observations on variation of layer structure established that at small gas consumption small cracks appear in the immobile layer and at increasing gas rate they become channels, 3-4 mm in diameter and 100-150 mm long. Then the layer starts gradually boiling at its top. With increasing gas consumption, bubbles rise to 40-60 mm and a strong entrainment of fines appear.

Electronics

Butenin, N. V.
ELEMENTS OF THE THEORY OF NONLINEAR OSCILLATIONS. 1963, 210p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Elementy Teorii Nelineinykh Kolebanii, Leningrad, 1962, 193p].

DESCRIPTORS: *Control systems, *Nonlinear systems, *Oscillation, Oscillators.

Endo, Kokichi, Yoshida, Minoru and others.
MEDIUM FREQUENCY BROADCAST ANTENNAS WITH UMBRELLA TOP LOADING. [1963] [21]p. (foreign text included) 4 refs.
(Order from SLA $2.60 63-18398

Trans. of Denki Tsushin Gakkai [Zas]shi (Japan) 1956 [v. 39, no. 2, p. 112-117].

DESCRIPTORS: *Antennas, *Radio broadcasting, Antenna configuration, Antenna components, Antenna radiation patterns, Medium frequency, Attenuation, Design, Operation, Tests.

According to the results of the antenna operations and experiments made by Radio Tokyo 50-kW Station (JOKR) and Hokkaido Broadcasting Co. 10-kW Station (JOHR), where a top-loaded medium frequency broadcast antenna of umbrella type instead of disk type has been in use, as well as by other stations; the umbrella type has a larger loading effect and a better anti-fading

effect than the disk type. The current distribution and load impedance measured on small model VHF-band antennas made from the operating broadcast antennas are in comformity with the actual operation. Those umbrella type top-loaded antennas now in operation utilize directly the results obtained from the model antennas. They have been in operation for more than 2 years, since August 1953. The results have been satisfactory and there has been neither disturbing phenomenon nor accident. (Author)

Kapitsa, P. L.
INTERNAL OSCILLATIONS OF 3-DIMENSIONAL RESONATORS WITH GRATE PARTITION. 23 Oct 63, 25p JPRS: 21550.
Order from OTS $0.75 63-31987

Trans. of mono. Elektronika Bol'shykh Moshchnostei (High Power Electronics) Moscow, 1962, p. 159-194.

DESCRIPTORS: *Cavity resonators, *Electromagnetic waves, *Oscillation, Diffraction gratings, Capacitance, Numerical analysis, Theory, Resonators.

The article is a theoretical study of the internal oscillations of a rectangular resonant cavity enclosing (parallel to one pair of walls) a grating formed by periodically placed parallel rods with a rectangular cross-section. Provided that the grating period and thickness are small in comparison with the wavelength and the cavity dimensions, the presence of the lattice can be taken into account with the aid of a limiting boundary condition which includes the capacitance between the grating rods per unit rod length. An analogous study was carried out for a cylindrical or coaxial cavity containing a cylindrical grate-type partition consisting of rods parallel to the axis of the cylinder. We consider the oscillations of such a cavity in the presence of solid radial partitions; in the latter case we obtain a resonator of complex form similar to the resonator of a multi-chamber magnetron. (Author)

Klimov, B. G.
LIMITING LAW FOR RELIABILITY OF SEQUENTIAI SYSTEMS. 16 Aug 63 [18p] 2refs FTD-TT-63-470.
Order from OTS or SLA $1.60 63-24036

Unedited rough draft trans. of Vychislitel'naya Tekhnika (USSR) 1962, v. 4, p. 98-110.

DESCRIPTORS: *Sequences, *Reliability (Electronics), *Control systems, *Special functions (Mathematical), Statistical functions, Probability.

It is demonstrated that the exponential law of reliability is an intrinsic property of practical systems consisting of a large number of elements, regardless of the distri bution of their intervals of trouble-free operation. A limiting law for reliability of sequential systems is formulated. Consequently, this method of calculating the reliability of complex sequential systems, based on the summation of the λ-characteristics of the elements, is given a stricter theoretical basis. (Author)

Kuleshov, V. F. and Rukhadze, A. A.
ON THE THEORY OF THE INTERACTION OF A BEAM OF CHARGED PARTICLES AND AN INHOMOGENEOUS PLASMA. POTENTIAL OSCILLATIONS. I. [1963] 27p 13refs
Order from OTS or SLA $2.60 63-20697

Trans. of A[kademiya] N[auk] SSSR. Fizicheskii Institut. [Rept]-A-25, 1963, p. 1-26.

DESCRIPTORS: *Particle beams, *Charged particles, Excitation, Electromagnetic waves, *Plasma oscillations, *Plasma physics, Dielectric properties, Permeability (Magnetic),

The interaction of a low-density inhomogeneous beam of charged particles and an inhomogeneous plasma is investigated in the study. The dielectric permeability tensor of an inhomogeneous plasma is generalized to the case of a plasma-beam system. A detailed study is made of the spectra of low-frequency potential field oscillations ($\omega \ll \Lambda$) in two extreme cases--of the interaction of a homogeneous beam and an inhomogeneous plasma and the interaction of an inhomogeneous beam and a homogeneous plasma. Criteria of instability are obtained and the frequencies and increments of growth of the electromagnetic oscillations excited in the system are estimated. It is shown that, together with the familiar branches of oscillations characteristic of the spectrum of a plasma at rest, the excitation of new branches of oscillations of the plasma-beam system takes place. These latter are excited for any directed velocities of the beam, while the excitation of the former (oscillations of the plasma itself) take place at velocities of the beam exceeding the thermal velocities of the particles in a plasma at rest (Author)

Kulikovskiĭ, A. G. and Lyubimov, G. A.
MAGNETOHYDRODYNAMICS. 1963, 250p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Magnitnaya Gidrodinamika, Moscow, 1962, 246p].

DESCRIPTORS: *Magnetohydrodynamics, Equations, *Plasma physics.

Molecular Physics and Spectroscopy

Al'tshuler, S. A. and Kozyrev, B. M.
ELECTRON PARAMAGNETIC RESONANCE. 1963, 383p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Elektronnyi Paramagnitnyi Rezonans, Moscow, 1961, 368p].
An unedited rough draft trans. is available from OTS or SLA $23.50 as 63-15571, FTD-TT-62-1086, 14 Jan 63 [475p[.

DESCRIPTORS: *Paramagnetic resonance, *Microwave spectroscopy, Metals, Crystal lattice defects, Semiconductors, Free radicals, Radiofrequency spectroscopy.

Bonino, Gianbattista and Lorenzelli, Vincenzo.
INFRARED SPECTRA OF ADSORBED MOLECULES: PLAN OF RESEARCH AND PRELIMINARY DISCUSSION. [1963] 13p 35refs
Order from SLA $1.60 63-20351

Trans. of Annali di Chimica (Italy) 1962, v. 52, Jul, p. 620-628.

DESCRIPTORS: *Infrared spectroscopy, *Catalysts, Molecules, Adsorption, Spectra (Infrared), *Spectrophotometers, Design.

After examining the difficulties characteristic of spectrometry of the far infrared and possible applications of this technique to the study of adsorbed molecules, initial results are reported of theoretical and experimental research in this field. On the basis of a systematic analysis of optical and energy conditions, it was possible to design a high-luminosity spectrometer particularly suitable for this type of research. There are reported the characteristics of the new spectrometer, capable of studying with good resolving power the region between 40 and 180 microns, using as radiation disperser an echelette with 8 lines/mm. (Author)

Klopfer, A.
GAS ANALYSIS IN VACUUM SYSTEMS. [1963] 11p 14refs
Order from SLA $1.60 63-20350

Trans. of [de] Ingenieur (Netherlands) 1962, v. 74, no. 34, p. [O]72-[O]78.
Another trans. is available from ATS $15.00 as ATS-75Q69G [1963] 11p.

DESCRIPTORS: *Gas analysis, *Mass spectroscopy, *Spectrum analyzers, *Vacuum apparatus, Gases, Surface properties, Chemisorption, Adsorption

The results obtained from many investigations in vacuum are influenced by the nature and partial pressures of the gases present in the vacuum system. In many cases the results may be explained only if the composition of the original gases is known. In principle, common mass spectrometers such as the conventional mass spectrometers or r.f. instruments can be used as gas analyzers. Since the gas content may not be changed by the mass spectrometer itself, certain precautions have to be taken in constructing the instruments and in the methods of measurement. Results of the investigations on residual gases in vacuum systems are given, and the influence of interactions between gases and surfaces on the residual gas composition are discussed. (Author)

Pace, E.
ACTION OF PHOSGENE ON DOUBLE BONDS, REPT. I. [1963] 15p
Order from K-H $15.00 K-H 12806

Trans. of Gazzetta Chimica Italiana, 1929, v. 59, p. 578-590.
Another trans. is available from SLA $1.60 as 63-14197 [1963] 12p.

DESCRIPTORS: *Phosgene, Acids, Chlorides, Carbonic acids, Chemical reactions, *Chemical bonds.

Astashenkov, P. T.
QUANTUM GENERATORS AND "DEATH RAYS". 6 Sep 63, 14p. JPRS: 20959.
Order from OTS $0.50 63-31696

Trans. of mono. Atomnaya Radiotekhnika (Atomic Radio Technology) Moscow, 1962, p. 77-89.

DESCRIPTORS: *Monochromatic light, *Optical phenomena, Lasers, Masers, Sources, Optical equipment, Optics, Infrared radiation.

Possible applications of quantum instruments of the optical and infrared ranges are enumerated. Discussed are communication, location-finding, and navigation. In addition, emphasis is placed on an anti-missile defense which is based on the employment of an optical range quantum generator.

Euler, J. and Hüppner, W.
CONCERNING A QUANTITATIVE SCHLIEREN PROCESS WITHOUT PHOTOMETRY (Über ein Quantitatives Schlierenverfahren Ohne Photometrie). [1963] [9p] (foreign text included) 4refs
Order from SLA $1.10 63-20493

Trans. of Optik (West Germany) 1950, v. 6, no. 6, p. 332-336.

DESCRIPTORS: *Schlieren photography, *Color photography, Optical filters, Prisms (Optics)

By the insertion of a second prism in the color schlieren arrangement according to Schardin and Stamm and by the use of a slit and a one-sided schlieren diaphragm, a structure is obtained, which, from the black-and-white image, in certain cases permits quantitative assertions, without photometry, with respect to the angle of deflection of schlieren and flaw points in the object investigated. The advantages are proved as compared to the original process; its mode of operation and possibility of application are discussed. (Author)

Françon, M.
MODERN APPLICATIONS OF PHYSICAL OPTICS. 1963, 114p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: Optics, *Optical instruments, Thin films, *Interference, Microscopy, Diffraction gratings, Lasers, Polarization, Integral transforms.

Svoren', Rudol'f.
LIGHT COUNTS OF KILOMETERS. 26 June 63 [4]p. FTD-TT-63-648.
Order from OTS or SLA $1.10 63-23792

Unedited rough draft trans. from Sovetskaya Kirgiziya (USSR) 1962, 15 Nov, p. 4.

DESCRIPTORS: *Distance-measuring equipment, *Range finding, *Light, *Beams (Electromagnetic), Electrical equipment, Optical equipment.

The operation of an electro-optical range finder is described. The operation of the instrument is based on the use of a beam of light, which, with the aid of an optical system, is focused on the point to be measured. Here is first set up a reflector, it consists of 133 miniature "fragments" with individual lens placed in front of each. This system traps the light beam and reflects it back to the instrument, where radio electronic devices give an accurate time reading of the distance covered.

Solid State Physics

PROCESS FOR PRODUCING EXTREMELY PURE SILICON FOR SEMICONDUCTOR USE. [1960] [10p] RIS rept. 97074.
Order from OTS or SLA $1.10 63-24129

Trans. of German patent applications St 13, 064 (12 i, 38) DAS 1,063,584, filed 19 Oct 57, pub. 20 Aug 57, by Standard Elektrik Lorenz AG.

DESCRIPTORS: *Semiconductors, Materials, *Silicon, Purification, *Semiconductor devices,

For abstract see Technical Translations 4: 65, 1960.

Amelinckx, S. and others.
PHYSICAL PROPERTIES OF UO_2 SINGLE CRYSTALS. Quarterly rept. no. 5, 1 Oct-31 Dec 62. [1963] 24p Contract 063.61.10/RDB
Order from OTS or SLA $2.60 EURAEC-524

Trans. of a rept. from Centre d'Étude de l'Énergie Nucléaire, Mol (Belgium) n.d.

DESCRIPTORS: *Single crystals, *Uranium compounds, Dioxides, Sintering, Diffusion, Thermal conductivity, Spectrographic analysis, Crystal lattices, Radiation effects

Several runs were made in the new furnace to prepare single crystals of UO_2 for studies at CEN and for satisfying requests from other institutions. The gyration method for spheroidization of single crystals was improved. An equipment for the sintering experiments and for observation of the necks formed between the particles was constructed. In a first experiment no sintering could be observed at temperatures below 1700°C. For the mass spectrometric determination of the U_{235}/U_{238} ratio a simple device was developed allowing the removal of parallel layers of a thickness of 0.1 u. UO_2 single crystals (as grown annealed and irradiated) were studied by transmission electron microscopy. Observations of small dislocation loops, small angle boundaries dislocations and fission tracks were made. The method developed for thinning UO_2 crystals was also applied to ferroelectric $BaTiO_3$. A few determinations of the thermal conductivity at room temperature and at liquid nitrogen temperature were performed. The values obtained (0.210 watts cm^{-1} $^oK^{-1}$ at 288°K and 0.061 at 77.8°K) confirm the conclusions of the previous report (Author) (See also EURAEC-463)

Anderko, Kurt and Schubert, Konrad.
X-RAY PHOTOGRAPHIC, DILATOMETRIC AND MICROSCOPIC STUDIES OF THE PHASES Cu_2Te, Cu_4Te_3, AND CuTe. [1963] 13p. (figs. tables omitted) 17 refs
Order from SLA $1.60 63-18061

Trans. of Zeitschrift für Metallkunde (West Germany) 1954, v. 45, no. 6, p. 371-378.

DESCRIPTORS: *Metallic crystals, *Copper compounds, *Tellurides, *Crystal lattices, *Phase studies, X-ray diffraction analysis, Thermal expansion, Microstructure.

In the copper-tellurium system, the transformation of Cu_2Te as a function of temperature was measured by dilatometer. In one sample with 34.5 atomic % Te, effects were shown at 180, 305, 345 and about 465°. On the basis of high-temperature x-ray pictures (at 640°) it was possible to determine the structure of the high (temp.) phase of Cu_2Te. It has a cubic face-centered translation group of the lattice constant $a = 6.10 \pm 0.05$ kX with 12 atoms in the elementary cell. In the face-centered lattice of the tellurium atom, the copper atoms are statistically distributed over a greater number of positions. The structure fits into an ion radius criterion given by P. Rahlfs. It is indicated that a radius criterion could also be set up with the use of metal radii. The heat effect at 365° in the copper-tellurium system, ascribed up to now only to the transformation of the Cu_4Te_3 phase, is therefore to be regarded as the result of the overlapping of this transformation with the peritectical of the CuTe phase. The polymorphic transformation of Cu_4Te_3 was confermed by high-temperature x-ray pictures. The existence of the CuTe phase was ascertained. It is related to the structure of its neighboring phase Cu_4Te_3. Assumptions as to the place correlation in this structure are discussed. (Author)

Bogenschütz, A. F. and Schütze, H. L.
EVALUATION OF SEMICONDUCTOR SURFACES BY MEANS OF IR-MEASUREMENTS. [1963] [24p] 20refs
Order from SLA $2.60 63-20615

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1962, v. 14, no. 8, p. 475-481.

DESCRIPTORS: *Semiconductors, Surface properties, *Infrared radiation, Etched crystals, Crystal lattice defects, Germanium, Silicon.

Since the infrared transmission of semiconductor specimens is influenced not only by the layer thickness and the doping but also by the surface condition of the specimens, infrared measurements may be used for the investigation of semiconductor surfaces. Prerequisite is the exclusion of influences by layer thicknesses and dopings. Under favorable experimental conditions, for example at a wavelength of $\lambda = 2.4 \mu m$, the infrared transmission of specimens in the conductivity range from intrinsic to 0.1 Ω-cm for n-type germanium, and of intrinsic to 1 Ω-cm for p-type, germanium, was not influenced by a layer thickness of up to 1000 μm. Similar results were obtained with silicon. The method was applied to the investigation of different types of treatment, such as lapping, etching, cleaning and storing of germanium and silicon wafers. Investigations were also carried out on the etching mechanism under the influence of different corroding solutions. (Author)

Gerven, Lieven van and Heremans, Frans.
MEASUREMENTS ON THE SUPERCONDUCTIVITY OF COLUMBIUM, LEAD, AND TIN FILMS (Metingen over de Supergeleidbaarheid van dunne Columbium-laagies, Loodlaadjes, en Tinlaajes) tr. by Alfred W. Beffie. 16 Sep 60 [7]p. (figs. tables omitted).
Order from OTS or SLA $1.10 62-23842

Partial trans. (excerpts) from K. Vlaamse Academie voor Wetenschappen, Letteren en Schone Kunsten van Belgie. Klasse der Wetenschappen. Verhandelingen, 1953, no. 42.

DESCRIPTORS: *Niobium, *Lead, *Tin, *Metal films, *Superconductivity, Resistance (Electrical), Oxidation, Thickness, Microstructure, Superconductors.

Guillaud, Charles and Bertrand, Roger.
STUDY OF THE CONDUCTIVITY OF SEMI-CONDUCTORS AND APPLICATION TO MIXED SYSTEMS OF OXIDES. [1963] 36p (figs omitted).
Order from SLA $3.60 63-18976

Trans. of Centre Nat[ional de la] Recherche Sci[entifique] Paris. Journal des Recherches (France) 1952, no. 18, p. 118-130.

DESCRIPTORS: *Semiconductors, Metallic compounds, *Oxides, *Iron compounds, *Zinc compounds, *Magnesium compounds, *Manganese, Electrical conductance, *Quantum mechanics, *Thermoelectricity, *Thermistors.

The results of measurements show that the conductivity as a function of the composition of the mixed oxides behaves in general as the theory allows one to predict. It was also shown what profit one can derive from the various obstacles encountered in the course of the measurements and how one can deduce from them the fundamental values proper to semi-conductors. With regard to the very large values of the $\frac{\rho T_1}{\rho T_2}$ ratios for certain compositions, a ratio of 40 corresponds to an exponential value of α^{20} of about 6. These materials can be used advantageously for the production of very sensitive thermistors. (Author)

Hund, F.
THE FLUORITE PHASE IN THE SYSTEM ZrO_2-CaO: ITS DISORDER AND THE BEHAVIOUR OF ITS ELECTRICAL CONDUCTIVITY. [1963] 8p. (figs omitted) 12refs
Order from SLA $1.10 63-20275

Trans. of Z[eitschrift für] Physik[alische] Chem[ie, Leipzig] (East Germany) 1952, v. 199, p. 142-155

DESCRIPTORS: *Zirconium compounds, *Calcium compounds, Oxides, *Phase studies, Fluorspar, *Crystal lattice defects, *Electrical conductance.

The desired molar content of the oxides mixed in the form of analyzed zirconium and calcium nitrate solutions was obtained by evaporating to dryness, the nitric oxide burned off, and the oxides, now in an active state, sintered at 1200 and 1460°C for about 5 hours. At 1200°C in the ZrO_2-CaO system, only a pure fluorite phase occurs for 10-20 mol % CaO content. The lattice constant of this phase increases from 5.1137 0.0007A up to 5.1263 0.0010A in the mix-crystals richest in CaO. From the lattice constants and the pycnometrically measured density, the disorder of these anomalous mix-crystals was determined. It consists of a full cation lattice, with vacancies in the anion lattice portion. For mix-crystals with 15.1 mol % CaO, the temperature dependence of the electrical conductivity was measured and the conductivity interpreted in terms of the disorder. (Author)

Natta, G[iulio, Corradini, Paolo, and Bassi, Ivano Walter].
CHEMISTRY: CRYSTALLINE STRUCTURE OF SOME ISOTACTIC POLY-α-OLEFINS. [1963] 13p (figs omitted).
Order from K-H $13.00 K-H-5408-b

Trans. of Accademia Nazionale dei Lincei. Classe di Scienze Fiziche, Matematiche e Naturali. [Rendiconti] (Italy) 1955 [ser. 8] v. 19, p. 404-411.
Other translations are available from OTS or ETC $1.85 as 61-17348, MTWL-855/1, 14p and from SLA $1.60 as 60-18496 [1960] 11p.

DESCRIPTORS: *Crystal structure, *Polymers, X-ray diffraction analysis, *Ethylenes

Osipov, K. A.
ACTIVATION PROCESSES IN SOLID METALS AND ALLOYS. 1963, 150p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of unidentified Russian mono., n. p., n. d.

DESCRIPTORS: *Metals, *Alloys, Crystals, Creep, *Crystal lattice defects.

Schoeneck, H. and Verleger, H.
THE METHODS OF PREPARING METALLIC SINGLE CRYSTALS. 3 Nov 50 [27p] 97refs
Order from SLA $2.60 63-18219

Trans. of [Metallwirtschaft, Metallwissenschaft, Metalltechnik] (Germany) 1939, v. 18, p. 576-584.

DESCRIPTORS: *Single crystals, *Metallic crystals, Preparation, *Recrystallization, *Crystallization, *Crystal growth, Crystal structure.

Seckelmann, R.
QUANTUMMECHANICAL REFLECTION AMPLIFICATION [AND] STATIC OF A SYSTEM WITH QUANTUMMECHANICAL AMPLIFIER. [1962] [26]p. 6 refs. AERDL T-1648.
Order from OTS or SLA $2.60 63-13409

Trans. of Heinrich-Hertz-Institut für Schwingungsforschung, Berlin/Charlottenburg. Technischer Bericht (West Germany) 1961, no. 50, 25p.

DESCRIPTORS: High frequency, *Amplifiers, *Quantum mechanics, *Masers, Statics, Reflection.

Part 1 of this paper is an investigation into the behavior of quantummechanical reflection amplifiers under conditions of high-frequency technology. The quantum-mechanical interaction between matter and high frequency field is discussed with the aid of equivalent-circuit diagrams in the region of the resonance frequency. A relationship between voltage amplification and the pulsation factor on the circuit in front of the amplifier is pointed out. One condition which the local curves of the amplifier have to satisfy for stable operation, is derived. Local curves of a simple repeater circuit are shown. Two networks are discussed which widen the band of the amplifier. Part 2 of the paper is an investigation into the conditions under which the static of a quantummechanical amplifier can be measured. A circuit with directional prongs in front of the amplifier and two differently hot static sources seem to be suitable. (Author)

Semiletov, S. A.
ELECTRON-DIFFRACTION INVESTIGATION OF THE STRUCTURE OF THIN LAYERS OF CADMIUM SULFIDE, SELENIDE, AND TELLURIDE. [1963] 6p
Order from ATS $8.25 ATS-25Q72R

Trans. of Kristallografiya (USSR) 1956, v. 1 [no. 3] p. 306-310.

DESCRIPTORS: *Tellurides, *Selenides, *Sulfides, *Cadmium compounds, Crystal structure, Electron diffraction analysis.

Stegmann, H.
STRUCTURAL CHANGES OF SELENIUM UNDER THE ACTION OF LIGHT. [1963] 2p
Order from ATS $2.50 ATS-09Q72G

Trans. of [die] Naturwissenschaften (West Germany) 1957, v. 44, no. 5, p. 108-109.

DESCRIPTORS: Light, *Selenium, Structural properties, Crystal structue.

Zolton, Gyulai.
CRYSTAL GROWTH AND THE BOUNDARY LAYER. 10 Oct 63, 30p 114refs JPRS: 21398.
Order from OTS $1.00 63-31910

Trans. of Fizikai Szemle (Hungary) 1963 [v. 13] no. 5, p. 131-143

DESCRIPTORS: *Crystal growth, Boundary layer, Boundary layer transition, Crystal structure, Phase studies.

A discussion by Zolton on the concept of a transitional boundary layer involvement is followed by brief biographical sketches and bibliographies of adherents of the Gyulai school.

Blokhintsev, D. I.
PRINCIPLES OF QUANTUM MECHANICS. 1963, 750p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Osnovy Kvantovoi Mekhaniki, Moscow, 1961, 512p].

DESCRIPTORS: *Quantum mechanics, Equations, *Field theory.

Bunkin, F. V.
ON THE THEORY OF THE SPECTROSCOPIC SATURATION EFFECT, tr. by L. J. Holtschlag. 3 Sep 63, 15p 13refs APL/JHU TG 230-T387. Contract NOw 63-0604-c
Order from OTS $0.50 63-11719

Trans. of #Izv[estiya] Vysshikh Uchebniykh] Zavedenii. Radiofiz[ika] (USSR) 1962, v. 5, no. 4, p. 687-696.

DESCRIPTORS: *Absorption spectrum, Paramagnetic resonance, Quantum mechanics, Magnetic properties, Numerical analysis.

The spectral absorptivity of a medium is considered in a nonlinear approximation, the radiation field being arbitrary and nonmonochromatic. It is shown that the spectral absorption coefficient of the medium is, in general, a nonlinear functional of the radiation intensity. The analysis is carried out by the method of successive approximations with the first terms of all expansions corresponding to "linear spectroscopy" and the higher terms to the saturation effect. The concept of nth order susceptibility (magnetic or electric) is introduced, corresponding to the nth nonlinear term in series expansion of the magnetization (or polarization) of a medium in an external alternating field. It is shown that each quantity satisfies dispersion relations of the Kramers-Kronig type. (Author)

Göppert-Mayer, Maria.
ELEMENTARY ACTIONS WITH TWO QUANTUM LEAPS. Thesis Göttingen U. (Germany). [1963] 15p (formulae figs omitted)
Order from SLA $1.60 63-20480

Trans. of Ann[alen der] Physik (Germany) 1931, ser. 5, v. 9, p. 273-294.

DESCRIPTORS: *Quantum mechanics, Atoms, Excitation, Atomic energy levels, Light, Electrons, Raman spectroscopy.

Kogan, V. I. and Galitskii, V. M.
PROBLEMS IN QUANTUM MECHANICS. 1963, 379p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W. Washington, 5, D. C.

Trans. of mono. [Sbornik Zadach po Kvantovoi Mekhanike, Moscow, 1956, 415p].

DESCRIPTORS: *Quantum mechanics, Functions, Scattering, Mathematical analysis.

Leipunskii, O. I. [Novozhilov, B. V., and Sakharov, V. N.].
PROPAGATION OF GAMMA QUANTA IN MATTER. 1963, 230p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Rasprostranenie Gamma-Kvantov v Veshchestve, Moscow, 1960, 207p].

DESCRIPTORS: *Propagation, *Gamma rays, *Quantum mechanics, Gamma ray scattering, Boundary layer, Attenuation, *Shielding, Absorption, Gamma-ray spectra.

Lomsadze, Yu. M., Kryvs'kyi, I. Yu., and Khimich, I. V.
THE ALL-UNION CONFERENCE ON THE THEORY OF ELEMENTARY PARTICLES (NO. 4) [UZHGOROD, NOV 62]. 21 Oct 63, 11p JPRS: 21518.
Order from OTS $0.50 63-31970

Trans. of Ukrayins'kyi Fizychnyi Zhurnal (USSR) 1963, v. 8, no. 5, p. 601-605.

DESCRIPTORS: *Conferences, *Elementary particles, Quantum mechanics, Field theory, Theory.

Brief summaries are given of 47 papers presented at the conference.

Sokolov, A. A. [Loskutov, Yu. M. and others].
QUANTUM MECHANICS. 1963, 700p.
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Kvantovaya Mekhanika, Moscow, 1962, 590p].

DESCRIPTORS: *Quantum mechanics, Nuclei, *Elementry particles, *Field theory, *Relativity theory, Spin.

Thermodynamics

Gurevich, L.
THEORIE DE LA DIFFUSION THERMIQUE, II (K Teorii Termicheskoi Diffuzii, II) [Theory of Thermal Diffusion, II]. 26 Mar 63 [13p] (foreign text included) CEA Trans. no. R 1697.
Order from OTS or SLA $1.60 63-24005

Trans. in French of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1944, v. 14, no. 3/4, p. 121-124.

DESCRIPTORS: *Thermal diffusion, Thermal conductivity, Heat transfer, Equations, Numerical analysis, Thermodynamics, Theory.

(See also 63-23999)

Isachenko, V. P.
THE MECHANISM AND CRITERIAL EQUATIONS OF HEAT TRANSFER FOR THE DROPWISE CONDENSATION OF STEAM. [1963] [10p] 10refs. C. E. Trans. 2993.
Order from OTS or SLA $1.10 63-24092

Trans. of Teploenergetika (USSR) 1962, v. 9 [no. 9] p. 81-85.

DESCRIPTORS: *Steam, Condensation, Drops, *Heat transfer, Equations, Thermodynamics.

Some aspects of the mechanism of dropwise condensation are examined. The role of thermocapillary movement is examined. A set of similarity criteria suitable for generalizing the experimental data on heat transfer for dropwise condensation, is derived. (Author)

Kon'kov, A. S. and Modnikova, V. V.
EXPERIMENTAL INVESTIGATION OF THE CONDITIONS OF DETERIORATION OF HEAT TRANSFER DURING BOILING IN TUBES. [1963] [10p] 10refs C. E. Trans. 2932.
Order from OTS or SLA $1.10 63-23966

Trans. of Teploenergetika (USSR) 1962, v. 9, no. 8, p. 77-81.
Another trans. is available from OTS or SLA $1.60 as AEC-tr-5539 [1962] 11p.

DESCRIPTORS: *Heat transfer, Deterioration, *Boiling, Steam, Water, Pipes, *Fluid flow.

For abstract see Technical Translations 9: 772, 1963

Kutateladze, S. S.
FUNDAMENTALS OF HEAT TRANSFER THEORY [2D ED]. 1963, 460p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Osnovy Teorii Teploobmena, 2d ed., Moscow/Leningrad, 1962, 456p].

DESCRIPTORS: *Heat transfer, *Heat exchangers, Boundary layer, Turbines, Liquid metals, Gas flow, Supersonic flow, Phase studies.

Margolin, A. D.
THERMAL EXPLOSION WITH CONSTANT DISTRIBUTION OF THE HEAT SOURCE. [1963] 3p 2refs
Order from OTS or SLA $1.10 63-20469

Trans. of #Zhurnal Fiz[icheskoi] Khimii (USSR) 1963, v. 37 [no. 4] p. 887-888.

DESCRIPTORS: *Explosions, *Heat, Electric fields, High frequency, Ultrasonic radiation, Penetration, *Equations of state, *Heat transfer, Thermal radiation

Palatnik, L. S. and Landau, A. I.
PHASE EQUILIBRIA IN MULTICOMPONENT SYSTEMS. 1963, 420p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of mono. [Fazovye Ravnovesiya v Mnogokomponentnykh Sistemakh, Kharkov, 1961, 405p].

DESCRIPTORS: Thermodynamics, *Phase studies, Mathematical analysis.

Salamandra, G. A. and Sevast'yanova, I. K.
AMPLIFICATION OF SHOCK WAVES IN THEIR PASSAGE THROUGH A FLAME FRONT. 19 July 63 [11]p. (1 fig. omitted) 16 refs. FTD-TT-63-532.
Order from OTS or SLA $1.60 63-23787

Unedited rough draft trans. of mono. Fizicheskaya Gazodinamika, Teploobmen i Termodinamika Gazov Visokikh, Moscow, 1963, p. 199-203.

DESCRIPTORS: *Shock waves, *Mechanical waves, Flames, *Combustion, Propagation, Hydrogen, Oxygen, Detonations, Measurement, Tests,

Studies were made of the following: the process of the formation of shock waves before a flame front in the case of combustion within closed compartments; and the dependence of the amplification of the shock wave on the composition and initial pressure of a burning mixture. Experiments were conducted in a tube with a square cross section 36.5x36.5 mm, closed at both ends and filled with a mixture of hydrogen and oxygen, which was ignited by a spark at the end of the tube. The photographing of this process was accomplished by the schlieren method. It was found that the amplification of the wave practically does not depend on the pressure. The shock wave in passing through the flame front increases the pressure and temperature in it. The changes in the zone of combustion bring about disturbances in the gas close to the front of the flame that are propagated in the direction of the propagation of the shock wave and overtaking this wave amplify it.

Shakhov, E. M.
VAPORIZATION OF SOLIDS BY ABSORBED RADIATION ENERGY. 10 May 63 [24]p. 14 refs. FTD-TT-63-77.
Order from OTS or SLA $2.60 63-23624

Unedited rough draft trans. of Inzhenernyi Zhurnal (USSR) 1961, v. 1, no. 4, p. 27-38.

DESCRIPTORS: *Thermal radiation, Absorption, Solids, *Vaporization, Surfaces, *Evaporation, *Mass transfer, Gases, Dynamics, Kinetic theory, Equations of state.

Consideration is given to the unidimensional problem which involves the vaporization of a solid body heated by the incident radiation it absorbs on its surface. In one case, the evaporation is assumed to take place from a surface initially contiguous to a vacuum; in the second case, the evaporation occurs into an ambient, gas filled space at some distance from the body.

Soloukhin, R. I.
TRANSITION OF BURNING INTO DETONATION IN GASES, tr. by David T. Williams. Aug 63 [3p] 4refs
Available from AIAA in Its Journal, v. 1, no. 8, $5.00

Trans. of Zhurnal Prikladnoi Mekhaniki i Tekhnicheskoi Fiziki (USSR) 1961, no. 4, p. 128-132.

DESCRIPTORS: *Combustion, *Detonations, Autoignition, *Gas flow, Detonation waves, Explosions, Propagation, Reaction kinetics,

Wave Propagation

Adonina, A. I. and Shestopalov, V. P.
DIFFRACTION OF ELECTROMAGNETIC WAVES IN A PLANE METAL GRATING WITH A SCREEN. 4 Oct 63, 12p 2refs JPRS: 21329.
Order from OTS $0.50 63-31885

Trans. of #Radiotekhnika i Elektronika (USSR) 1963, v. 8, no. 6, p. 950-958.

DESCRIPTORS: *Electromagnetic waves, *Diffraction, *Diffraction gratings, Wire screens, Equations, Mathematical analysis, Electromagnetic wave reflections.

A solution is given to a problem on diffraction of electromagnetic waves in a plane metal grating with a screen. A plane wave randomly hits the grating. Vectors of the electromagnetic were also randomly oriented in space. Results obtained on a "Ural-2" computer made it possible to plot graphs of relationships of the coefficient of reflection and amplitude of diffraction spectrums from the relationship of the phase to wavelength and relationship of phase to width of the opening between the metal strips for a range of values of one of the angles of incidence. (Author)

Sidorov, V. V.
METHOD OF PREVENTING SIGNAL DISTORTIONS CAUSED BY MULTIPATH DISTRIBUTION DURING METEORIC COMMUNICATION. 25 July 63 [4]p. FTD-TT-63-434.
Order from OTS or SLA $1.10 63-23815

Unedited rough draft trans. of Russian patent 147,608, appl. no. 726736/26-9, 17 Apr 61.

DESCRIPTORS: *Radio signals, *Radio interference, Distortion, *Multipath transmission, Meteros, Reflection, Doppler effect, Propagation.

The invention pertains to a method of preventing signal distortions, caused by multipath propagation at meteoric communication, based on scatter-differential reception of signals, characterized by the fact, that to obtain information about distortions without expanding the frequency band of the channel, the fact of multipath propagation is detected by the difference in amplitude-time characteristics of meteoric echoes at scattered reception over a small base (base smaller than first Fresnel zone). (Author)

Yakovleva, G. D., Yakovlev, O. I., and Rogashkova, A. I.
ON THE DOPPLER EFFECT WHEN MOVING THROUGH A HETEROGENEOUS MEDIUM. 25 July 63 [13]p. 4 refs. FTD-TT-63-673.
Order from OTS or SLA $1.60 63-23794

Unedited rough draft trans. of #Radiotekhnika i Elektronika (USSR) 1963, v. 8, no. 3, p. 416-424.

DESCRIPTORS: *Doppler effect, Dielectric properties, Statistical functions, Equations, Mathematical analysis, Electromagnetic waves, Propagation, Radio receivers.

Described is a method of analyzing the Doppler effect during the movement of a receiver through a heterogeneous medium, when the change in dielectric permeability in the heterogeneity is little different from the dielectric permeability of surrounding space. An expression is given for the Doppler change in frequency when the receiver moves in a heterogeneity, having cylindrical and spherical form; discussed is a case of a statistically heterogeneous medium. (Author)

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

DEVELOPING SCIENCE IN SOCIALIST COUNTRIES. 17 Oct 63, 18p JPRS: 21477.
Order from OTS $0.50 63-31950

Trans. of Akademiya Nauk SSSR. Vestnik, 1963 [v. 33] no. 7, p. 5-9, 54-55, 84-89.

DESCRIPTORS: *Science, *Communism, Labor, Scientific personnel, *Conferences, *Awards.

Contents:
Science facilitates the building of Communism, by M. V. Keldysh
"Hero of Socialist Labor" awarded to geologist Nalivkin, by D. I. Shcherbakov and A. V. Peive
Scientific Conference of Socialist Countries, Moscow, Jun 62, by M. I. Agoshkov
Scientific cooperation of Socialist countries and the development of science in Vietnam, by Nguen Kkhan Toan.

TRANSLATED POLISH PATENTS (FIRST CLAIM ONLY). Oct 63 [80p]
Order from OTS $2.00 63-11420

Trans. of Polish patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim of patents from the following years: 1957, 17 patents; 1958, 1 patent; 1960, 50 patents; 1961, 99 patents; 1962, 83 patents.

DESCRIPTORS: *Patents, Inventions, *Poland, Metallurgy, Textiles, Fuels, Chemical engineering, Civil engineering, Railroads, Electrical engineering, Coatings, Furnaces, Leather, Drugs, Wood, Plastics, Elastomers, Precision instruments, Agriculture, Aeronautics, Vehicles, Sanitary engineering.

TRANSLATED POLISH PATENTS (FIRST CLAIM ONLY). Oct 63 [95p]
Order from OTS $2.25 63-11421

Trans. of Polish patents including patent number, class number, name and residence of patentee and patent owner, title, filing and priority date, and first claim of patents from the following years: 1957, 14 patents; 1960, 26 patents; 1961, 161 patents; 1962, 99 patents.

DESCRIPTORS: *Patents, *Poland, Inventions, Fuels, Mining engineering, Fermentation, Metallurgy, Textiles, Chemical engineering, Railroads, Electrical engineering, Dyes, Adhesives, Coatings, Medical equipment, Drugs, Hoists, Civil engineering, Plastics, Precision instruments, Data processing systems, Agriculture, Inturnal combustion engines, Food, Pumps, Vehicles, Containers, Marine engineering, Ceramic materials.

Fomin, V. G.
A NEW FORM OF COORDINATION OF SCIENTIFIC RESEARCH. 4 Oct 63, 3p JPRS: 21335.
Order from OTS $0.50 63-31886

Trans. of Akademiya Nauk SSSR. Sibirskoe Otdelenie. Izvestiya, 1963, no. 5, p. 121-122.

DESCRIPTORS: *Research program administration, Scientific research, *Economics,

A plan adopted by the Siberian Division of the USSR Academy of Sciences for the territorial coordination of Research in Economics is discussed.

Lavrent'ev, M. A.
A GREAT SCIENCE MOVES EAST. 12 June 63 [15]p. FTD-TT-63-236.
Order from OTS or SLA $1.60 63-23529

Unedited rough draft trans. of Nauka i Zhizn' (USSR) 1958 [v. 25] no. 9, p. 1-4, 6.

DESCRIPTORS: *Scientific organizations, *Industrial plants, *Natural resources, Siberia, Scientific research.

An account of the establishment of the Siberian Branch of the USSR Academy of Sciences and its "scientific city" at Novosibirsk.

Communication Theory

Leites, R. D., Leibman, Yu. A., and Sobolev, V. N.
A MATHEMATICAL MODELING METHOD FOR SPEECH SIGNAL TRANSMISSION SYSTEMS [AND] AN ANALOG-DIGITAL CONVERTER FOR SPEECH SIGNAL INPUT TO A COMPUTER. Foreign Developments in Machine Translation and Information Processing no. 140. 21 Oct 63, 32p 14refs
JPRS: 21527.
Order from OTS $1.00 63-31976

Trans. of #Elektrosvyaz' (USSR) 1963 [v. 17] no. 8, p. 32-48.

DESCRIPTORS: *Mathematical models, Communication theory, *Speech transmission, *Voice communication systems, *Analog-to-digital converters, Speech, Communication systems, *Digital computers,

Aspects of mathematical modeling of signals in communication systems and especially in speech transmission systems are analyzed. A method is worked out for the introduction of a speech signal into a digital computing machine (DCM) by direct transformation of the signals into a series of numbers, which must, after processing in the DCM according to the given program, be retransformed into an uninterupted time function. Methods for the mathematical description of the transmission processes of speech signal through a communications system are worked out. (Leytes) An analog-digital converter is described, based on the sequential transformation of PAM, PWM, PCM signals and designed for the input of a speech signal to a fast acting digital computer for mathematical modeling of communications systems. Analysis is performed and quantitative evaluation made of converting errors leading to nonlinear and frequency distortions. A formula is developed for calculation of the coefficient of nonlinear distortion. (Leybman and Sobolev)

Saget, L. le and Demartres, J.
TELEGRAPH SATELLITES. [1963] 18p
Order from SLA $1.60 63-20640

Trans. of Commutation et Electronique (France) 1962, no. 3, p. 36-43.

DESCRIPTORS: *Telegraph systems, Telegraph equipment, Networks.

Owing to the present structure of the French automatic telegraph network, it is common to see large points of concentration of telex subscribers at relatively long distances from their automatic connecting switches. That is why the French Administration was prompted to recommend the use of a particular type of installation, the "telegraph satellite," which makes it possible to link up a hundred or several hundred telex subscribers and connect them to their automatic switching equipment over a reduced number of telegraph channels. The authors specify the function of these satellites in the French telegraph network and describe their structure, operating principles and essential technical characteristics. (Author)

Sharaev, A. S., Brazhenas, R. S. and others.
METHOD OF DECODING ST-35 CODE, NO. 2 CODE OR ANOTHER FIVE-UNIT CODE. 17 June 63 [5]p.
FTD-TT-63-498; AD-411 209.
Order from OTS or SLA $1.10 63-23623

Unedited rough draft trans. of Russian patent 144,522, appl. no. 680,008/26, 23 Sep 60,

DESCRIPTORS:*Coding, *Communication theory, Relays, Communication systems, Communication equipment,

A method of decoding with the use of accumulation and code decoding by using a smaller number of accumulation elements is described. To simplify code transformation only a part of code combination is decoded, including 2, 3, 4, and 5 pulses. The first pulse, taken from the first contact of the transmitter, is fed directly to the combiner, to which are also connected the outputs from the decoder. Where by two identical four element combinations of signs of a five unit code, accumulated on one element, are transformed into four combinations of five unit code to obtain all possible combinations of signs of the transformed code. This method of decoding codes can be used in developing code transformers in communication systems, using telegraph devices of different codes.

Shastova, G. A.
INVESTIGATION OF THE NOISE-STABILITY IN THE TRANSMISSION OF TELE-CONTROLLED COMMANDS BY METHODS OF THE THEORY ON THE POTENTIAL NOISE-STABILITY. [1963] [23]p. 1 ref.
Order from OTS or SLA $2.60 63-18708

Trans. of Avtomatika i Telemekhanika (USSR) 1955, v. 16, no. 4, p. 344-355.
Another trans. is available from OTS or SLA $1.60 as 62-23075, MDF S-104 [1961] 19p.

DESCRIPTORS: *Communication theory, *Remote control systems, Signals, Noise, Stability, Shielding, Statistical analysis, *Coding.

The methods in the theory of potential noise-stability permit to select the most rational from the viewpoint of noise-stability for fluctional interferences - method for the transmission of commands, as well as to investigate the dependence of the noise-stability on the energetic characteristics of the signal, the speed of response, and on the frequency band. For the transmission of commands by complicated signals with a time division of the channel pulses, a limited amplitude and duration of the signal of the command, and with a rigid synchronization of the receiving device the following conditions are true: (a) for two selective features the highest noise-stability in the transmission of commands by video pulses can be provided by codes with polar selective features and for the transmission by radio pulses it can be provided by the codes with phase (on 180°) features; (b) the most effective protection in codes with two selective features is the protection with respect to the even number of pulses; (c) the codes with frequency selective features permit to increase the noise-stability considerably by means of increasing the number of the frequency features and by expanding the bands of the working frequencies; (d) the most effective protection in the codes with frequency features is the protection with respect to the number of simultaneously received pulses. (Author)

Information Theory

Pinsker, M[ark] S[emenovich].
INFORMATION AND INFORMATION STABILITY OF RANDOM QUANTITIES AND PROCESSES (Informatsiya i Informatsionnaya Ustoichivost' Sluchainykh Velichin i Protsessov). 9 Aug 63 [251p] 40refs FTD-TT-62-956.
Order from OTS or SLA $16.50 63-24050

Unedited rough draft trans. of Problemy Peredachi Informatsii (USSR) 1960, no. 7, p. 1-204.

DESCRIPTORS: *Communication theory, Probability, *Statistical processes.

Topics include: probability spaces; information; conditional information; information stability; random processes (definition of the rate of generation of information and information stability of random processes); rate of information generation and information stability of stationary random processes in a discrete argument with a finite number of states; rate of information generation on stationary random processes (general case); information stability of stationary random processes; information and information stability of Gaussian random variables; calculation of the rate of information generation for Gaussian random processes; and information stability of Gaussian random process.

Tan, Wei-han.
THE FREQUENCY RESPONSE FUNCTION IN A COHERENT OPTICAL SYSTEM AND ITS FREQUENCY SELECTION CHARACTERISTICS IN TRANSMITTING OPTICAL INFORMATION, tr. by N. H. Ng. May 63 [17p] 4refs Emmanuel Coll. Research Language Center Research Trans. E-T-Ch-63-4.
Order from OTS or SLA $1.60 63-24060

Trans. of Wu-Li Hsüeh Pao (Chinese People's Republic) 1960, v. 16, no. 6, p. 316-323.
Another trans. is available from OTS or SLA $12.00 in 61-31144, JPRS-7694, 5 May 61, 164p.

DESCRIPTORS: *Optical systems, *Optical images, Wave transmission, Frequency, *Functions, *Communication theory, Diffraction, Fourier analysis.

Tan, Wei-han and Wang, Chih-chiang.
OPTICAL IMAGE FORMATION IN TERMS OF FOURIER SUMMATION AND ITS RELATION TO INFORMATION TRANSMISSION, tr. by N. H. Ng. May 63 [24p] 19refs Emmanuel Coll. Research Language Center Research Trans. E-T-Ch-63-5.
Order from OTS or SLA $2.60 63-24058

Trans. of Wu Li Hsüeh Pao (Chinese People's Republic) 1960, v. 16, no. 6, p. 305-315.
Another trans. is available from OTS or SLA $12.00 in 61-31144, JPRS-7694, 5 May 61, 164p

DESCRIPTORS: Optical systems, *Optical images, Wave transmission, *Fourier analysis, *Communication theory, Diffraction, Integration,

Use is made of a mechanism of continuously changing the diffraction single-slit width, first to get an expression for the spectral terms of the object structural function, second to derive the concept of information ar information transmission densities, and third to arrive at a general conclusion that the information density is directly proportional to the area of the light aperture but does not depend on the geometry of the aperture. The process of successively measuring all spectral terms in the optical system to obtain the object structural function is discussed. Multiple beam interference phenomena are explained in terms of the information theory.

Photographic Equipment

Glotov, O. M.
SOME NEW METHODS IN FORENSIC PHOTOGRAPHY. [1963] 7p
Order from OTS or SLA $1.10 63-18876

Trans. of Leningrad U. Vestnik (USSR) 1962, v. 17, no. 11 [Seriya Ekonomiki, Filosofii, Prava, no. 2] p. 152-158.

DESCRIPTORS: *Photography, Ultraviolet radiation, Images, Glass, Mirrors, Reflection, Ultraviolet filters, Mercury lamp, Quartz, Photographic lenses, Photographic plates.

A method is given for preparing sharp photographic images of finger prints from mirrors, or transparent glass, where finger prints are located on both surfaces and where one print faces another from the other side. The method assumes that the glass has a good transparency for visible rays, and transmits ultraviolet only within the range of 365 mμ of mercury spectrum. When finger prints are photographed from a mirror, windowpane or glassware by using shorter wavelengths than 365 mμ, only the images of finger prints on the top surface of photographed objects are obtained. All radiant energy reflected from finger prints located beyond the top surface of glass, including that originating from a reflection of the finger print from the mirror amalgam, is filtered in the body of glass from rays shorter than 365 mμ. A filter transmitting radiant energy of 313 mμ wavelength of mercury spectrum only is mounted in front of the objective (or behind it). The 313 mμ wavelength was selected because it is the strongest line after the 360 mμ line. A Quartz lens must be used when finger prints are photographed from a mirror. Mercury-quartz lamps are used as an ultraviolet light source.

Korolev, M.
WONDER-CAMERA. 21 Aug 63 [4p] FTD-TT-63-683.
Order from OTS or SLA $1.10 63-24044

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1963, no. 135 (16356) 15 May, p. 4.

DESCRIPTORS: *High speed photography, *Motion-picture cameras,

A popularized account concerning a motion picture camera capable of taking 500 million frames per second.

SOCIAL SCIENCES

Avondo-Bodino, G.
ECONOMIC APPLICATIONS OF THE THEORY OF GRAPHS. 1963, 111p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

DESCRIPTORS: *Graphic analysis, *Economics, *Personnel management, *Management engineering, Industrial production, Topology, Transportation, Warehouses, Applied mathematics.

Debbrecht, Hermann.
LANGUAGE STUDY AID, tr. by J. R. -P. 31 Jul 63, 6p (figs omitted).
Order from OTS or SLA $1.10 63-23574

Trans. of German patent 848,277, cl. 42n, gr. 6/03, pat. from 25 Jan 51, appl. 20 Dec 51, granted 3 Jul 62, pub. 1 Sep 52.

DESCRIPTORS: *Language, Learning

The invention involves a language study aid with tabular arrangement of foreign langauge verb conjugations, characterized by means for presenting the principal parts of the verbs outside the table in different characters or on differently colored backgrounds to correspond with the representation in the body of the table. The blocks of the table are exchangeably mounted in or on a frame. The table with exchangeable blocks is arranged in a box frame, to which box the blocks with the principal parts and possibly with subordinate forms are affixed and in which the said blocks can be placed before the said box is closed. (Author)

Kaufmann, A.
METHODS AND MODELS OF OPERATIONS RESEARCH. 1963, 520p
Order from Scripta Technica, Inc., 1000 Vermont Ave., Washington, 5, D. C.

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: *Operations research, *Mathematical models, Probability, Matrix, Algebra, Statistical analysis.

Konnertz, Otto.
TOY RIDING ANIMAL PROPELLED BY MOVEMENTS OF THE RIDER, tr. by G. E. 2 Jul 63, 3p (fig omitted).
Order from OTS or SLA $1.10 63-23573

Trans. of German patent 833,772, cl. 77e, gr. 1506, pat. from 1 Aug 50, appl. announced 2 Aug 51, granted 7 Feb 52, pub. 13 Mar 52.

DESCRIPTORS: *Recreation, Design

The invention relates to a toy riding animal propelled by movements of the rider. The fact that the fore and hind legs are arranged in the manner of a trestle and are provided with elastic springs at the bottom constitutes the object of the invention. The forelegs are pulled forward, and a tension spring pulls back both body and hind legs to their original position. The legs may consist of tubes surrounded by the tension springs. (Author)

Lemberg, R. G.
REINFORCEMENT: AN IMPORTANT LINK IN THE EDUCATIONAL PROCESS. [1963] [21p]
Order from OTS or SLA $2.60 63-18926

Trans. of Sovetskaya Pedagogika (USSR) 1960, v. 24, [no. 7] p. 39-50.

DESCRIPTORS: *Education, *Learning, Social communication,

Detailed discussions and examples are given on the following methods of reinforcement: exercises, memorization, recognition or recall, reproduction, practical application of theory, systematizing and generalizing, and revision. Emphasis is placed on exercises and practical applications. Classroom procedures used in Alma Ata are used as examples of the application of these learning techniques.

Lesourne, J.
ECONOMIC ANALYSIS AND INDUSTRIAL MANAGEMENT. 1963, 652p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W. Washington, 5, D. C.

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: *Economics, *Management engineering, Operations research, Mathematical models, Decision making, Industries.

Levin, M. G. and Potapov, L. P.
PEOPLES OF SIBERIA. 1963, 1000p
Order from Scripta Technica, Inc., 1000 Vermont Ave., N. W., Washington, 5, D. C.

Trans. of Russian mono. [Narody Siberia, Moscow, 1956, 1083p].
A partial trans. (p. 687-700) is available from LC or SLA mi$2.70, ph$4.80 as 59-12940, 26 Jan 59, 24p].

DESCRIPTORS: *Siberia, *History, *Anthropology, *Geography, Economics, Population, Bibliographies.

Massé, P.
OPTIMAL INVESTMENT DECISIONS. 1963, 516p
Order from Scripta Technica, Inc., 1000 Vermont Ave., Washington, 5, D. C.

Trans. of unidentified French mono., n.p., n.d.

DESCRIPTORS: *Decision making, *Economics, *Management engineering, Operations research.

Newell, W. C., ed.
VOCABULARY OF FOUNDARY PRACTICE (IN 6 LANGUAGES). 1963, 310p
Order from PP $17.00

DESCRIPTORS: Language, *Dictionaries, *Foundries, *Metallurgy, Vocabulary.

Paganini, Carl.
BOARD FOR ADVERTISING PICTURES AND THE LIKE, tr. by J. R. -P. 24 Jul 63, 4p (figs omitted).
Order from OTS or SLA $1.10 63-23582

Trans. of Swiss patent 284,967, cl. 122a, appl. filed 14 Apr 50, granted 15 Aug 52, pub. 1 Dec 52 (priority claimed: 21 Mar 50, Germany).

DESCRIPTORS: *Commerce, Pictures, *Display systems.

The object of the invention is a board for advertising pictures and the like, characterized in that the picture surface is subdivided into a plurality of aligned contiguous sections that project roof-like from the plane of the board, and the similarly oriented surface strips are combined in each case to form one picture, so that depending upon the direction of viewing with respect to the plane of the board only one or the other picture is distinguishable. (Author)

Weiss, Jean-Bernard.
TOY, tr. by J. R.-P. 11 Jul 63, 5p (figs omitted).
Order from OTS or SLA $1.10 63-23565

Trans. of French patent 1,146,275, gr. 20, cl. 1, internat'l cl. A63h, appl. 26 Mar 56, granted 20 May 57, pub. 8 Nov 57.

DESCRIPTORS: *Recreation, Geometric forms, Design.

The object of the invention is a toy comprising a hollow body within which there are arranged partitions that bound at least one labyrinth path in the space for a marble or other mobile object. The path may start from an entrance and terminate either at an outlet or at a predetermined point within the body itself. It may also have both its ends inside said body. The partitions may be transparent or opaque, or they may even be mirrors. In an embodiment of the invention, the body is constituted by joined cubes each with its own partitions, entrance and exit. The said cubes are so disposed that the exit from one cube coincides with the entrance of the adjacent cube. In another form of embodiment, the body comprises an open cube furnished with separating partitions bearing baffles perpendicular to the plane of the said partitions. The player introduces the marble at the entrance and causes it to travel along the path of the labyrinth in order to make it emerge via the exit. (Extracted)

BIBLIOGRAPHY

Library of Congress, Washington, D. C.
MONTHLY INDEX OF RUSSIAN ACCESSIONS.
Nov 63, 325p.
Order from GPO $12.00/year

This index is a record of the publications in languages spoken in the Soviet Union currently received by the Library of Congress and a group of cooperating libraries. It consists of three parts: Part A lists monographic literature published after 1944, with the title in the original language preceded by its English translation; Part B lists periodicals published after 1946; Part C constitutes a subject guide to both the monographs and periodical articles listed in Parts A and B.

ABSTRACTS FROM EAST EUROPEAN SCIENTIFIC AND TECHNICAL JOURNALS NO. 328 (GENERAL SERIES). 22 Oct 63, 28p JPRS: 21547
Order from OTS $0.75 63-31984

Abstract trans. of Bulgarska na Naukite. Doklady, 1963, v. 16, no. 4, p. 345-363, 365-375, 377-387, 389-407, 409-427, 429-447, 449-452; no. 5, p. 457-467, 469-471, 473-479, 481-507, 509-547, 549-563.

DESCRIPTORS: *Abstracts, Bibliographies, Metals, Terrestrial magnetism, Geodesics, Ionosphere, Serum, Chemical analysis, Chemical reactions, Semiconductors, Biochemistry, Plants (Botany), Electrotherapy, Veterinary medicine, Mathematics, Diseases, Spectroscopy, Crystals, Electrochemistry, Masers, Electronics, Organic compounds, Quartz, Animals, Drugs.

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/6370
Baratov, Georgiy Fedorovich
PROTECTION OF THE POPULATION FROM NUCLEAR, CHEMICAL, AND BACTERIOLOGICAL WEAPONS (Zashchita naseleniya v usloviyakh primeneniya atomnogo, khimicheskogo i bakteriologicheskogo oruzhiya). Kiyev, Medgiz USSR, 1962. 423p. 50,000 copies printed.

BR-SOV/6372
Kobranova, Vera Nikolayevna
PHYSICAL PROPERTIES OF ROCKS; PETROPHYSICS (Fizicheskiye svoystva gornykh porod; petrofizika) Moscow, Gostoptekhizdat, 1962. 490p. Errata slip inserted. 4650 copies printed.

BR-SOV/6375
Lyapunov, Boris Valer'yanovich and Nikolay Aleksandrovich Nikolayev
THROUGH THORNS TO THE STARS (Skvoz' ternii k zvezdam) [Moscow] Izd-vo TSKVLKSM "Molodaya gvardiya," 1962. 174p. 65,000 copies printed.

BR-SOV/6378
Satin, M. S., and V. R. Klem
POROUS FINE-GRAINED AUTOCLAVE-HARDENED CONCRETES (Porizovannyye melkozernistyye betony avtoklavnogo tverdeniya) Leningrad, Gosstroyizdat, 1962. 60p. Errata slip inserted. 3000 copies printed.

BR-SOV/6379
Kaynarskiy, Il'ya Semenovich, and Eleonora Vladimirovna Degtyareva
CARBORUNDUM REFRACTORIES; PROPERTIES OF SILICON CARBIDE, TECHNOLOGY, PROPERTIES AND APPLICATION OF CARBORUNDUM REFRACTORIES (Karborundovyye ogneupory; svoystva karbida kremniya, tekhnologiya, svoystva i primeneniye karborundovykh ogneuporov) Khar'kov, Metallurgizdat, 1963. 251p. 3050 copies printed.

BR-SOV/6382
Khimushin, Fedor Fedorovich
ALLOYING, HEAT TREATMENT, AND PROPERTIES OF HEAT-RESISTANT STEELS AND ALLOYS (Legirovaniye, termicheskaya obrabotka i svoystva zharoprochnykh staley i splavov) Moscow, Oborongiz, 1962. 335p. Errata slip inserted. 4050 copies printed.

BR-SOV/6385
Efros, I. Ye.
DESIGN PRINCIPLES OF BOMBSIGHTS (Osnovy ustroystva pritselov dlya bombometaniya) 2d ed., rev. Moscow, Voyenizdat, 1947, 318p. 48,000 copies printed.

BR-SOV/6386
Genkin, Semen Isaakovich and Natal'ya Dmitriyevna Lebedyanskaya
HERMETIC SEALING OF MODERN AIRPLANES (Germetizatsiya sovremennykh samoletov) Moscow, Voyenizdat, 1962. 108p. 8000 copies printed.

BR-SOV/6397
Goncharenko, Mikhail Nikolayevich
MILITARY USE OF CYBERNETICS (Kibernetika v voyennom dele) Moscow, Izd-vo DOSAAF, 1960. 174p. 34,000 copies printed.

BR-SOV/6402
Lashko, N. F., and S. V. Lashko
SOME PROBLEMS OF METAL WELDABILITY (Nekotoryye problemy svarivayemosti metallov) Moscow, Mashgiz, 1963, 229p. Errata slip inserted. 4000 copies printed.

BR-SOV/6403
Rogachevskaya, Z. M.
PHASE DIAGRAMS OF METAL SYSTEMS PUBLISHED IN 1959, NO. 5 (Diagrammy sostoyaniya metallicheskikh sistem, opublikovannyye v 1959, no. 5) Moscow, 1962. 165p. Errata slip inserted. 1000 copies printed.

BR-SOV/6423
Lebedev, Yu. A., V. D. Moskalev, S. V. Chukov, and V. I. Chumakov
HOW TO PROTECT YOURSELF FROM WEAPONS OF MASS CONTAMINATION (Kak zashchishchat'sya ot oruzhiya massovogo porazheniya) Moscow, Izd-vo DOSAAF, 1962. 30p. No. of copies printed not given.

BR-SOV/6425
Gerberg, Anatoliy Aronovich and Aleksandr Sergeyevich Osipov
CONSTRUCTION OF AIRPORTS (Stroitel'stvo aerodromov) Moscow, Avtotransizdat, 1962. 330p. 3000 copies printed.

BR-SOV/6426
Bogolyubskiy, G. N. and others.
PROTECTION OF THE POPULATION FROM MODERN MEANS OF DESTRUCTION: HANDBOOK FOR DOSAAF ORGANIZATIONS (Zashchita naseleniya ot sovremennykh sredstv porazheniya; uchebnoye posobiye dlya organizatsii DOSAAF) 2d ed., rev. and enl. Moscow, DOAAF, 1963. 254p. 450,000 copies printed.

BR-SOV/6434
Gorbatskiy, V. G., and I. N. Minin
UNSTABLE STARS (Nestatsionarnyye zvezdy) Moscow, Fizmatgiz, 1963. 355p. (Series: Problemy teoreticheskoy astrofiziki) 2000 copies printed.

TRANSLATIONS IN PROCESS

ARTIFICIAL EARTH SATELLITES, 1963, NO. 16.
Iskusstvennye Sputniki Zemli (USSR) 1963, no. 16, 266p.

ARTIFICIAL EARTH SATELLITES, 1963, NO. 17.
Iskusstvennye Sputniki Zemli (USSR) 1963, no. 17, 110p.

NEWS OF THE ACADEMY OF SCIENCES USSR, DEPARTMENT OF TECHNICAL SCIENCES, TECHNICAL CYBERNETICS, 1963, NO. 5.
Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya: Tekhnicheskaya Kibernetika, 1963, no. 5.

[NEWS OF THE INSTITUTES OF HIGHER LEARNING. RADIO ENGINEERING] 1963, VOL. VI, NO. 4.
Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1963, v. 6, no. 4.

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PROBLEMS OF SPACE BIOLOGY, 1962, VOL. 1.
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THE RELATIONSHIP OF MAJOR QUATERNARY LAND DEPOSITS IN SINKIANG AND CLIMATIC DEVELOPMENT OF SIMILAR REGIONS; PRELIMINARY RESEARCH INTO FORMS OF AGRICULTURE IN KAN-TZU A-PA REGION.
Ti Li Hsüeh Pao (Chinese People's Republic) 1963 [v. 29] no. 2, p. 109-125, 156-168.

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Zoologicheskii Zhurnal (USSR) 1963, v. 42, no. 10, p. 1433-1471, 1539-1545, 1574-1577, 1584-1589.

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[Akademiya Nauk SSSR]. Institut Fiziki Zemli. Trudy, 1963, no. 26(193) no. 2, p. 2-103.

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[NO ENGLISH TITLE GIVEN] (Spectres de Vibration-Rotation de Molecules Simples Diatomiques ou Polyatomiques Avec Long Parcours d'Absorption, XII. Le Spectre de $C12_o^{16}2$ Entre 3500 et 8000 cm^{-1} et les Constantes Moleculaires de Cette Molecule).
Can[adian] J[ournal of] Phys[ics] 1957, v. 35, no. 5, p. 608-648.

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TELECOMMUNICATION NETWORK BASED ON A FIXED SATELLITE. (Un Reseau d'Interconnexion de Telecommunications par Satellite Stationnaire).
C[ompagnie] F[rancaise] T[homson]-H[ouston]. Revue Techn[ique: Electronique] 1962, no. 36, p. 9-42.

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STUDY OF THE PLANETS BY THE POLARIZATION OF THEIR LIGHT. Thesis.
Mono. Etude des Planetes par la Polarisation de Leur Lumiere, n.p., 1955, 117p.

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CELESTIAL MECHANICS. ANALYTIC AND QUALITATIVE METHODS.
Mono. Nebesnaya Mekhanika. Analiticheskie i Kachesvennye Metody [Moscow] 1964.
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THEORY OF ATTRACTION.
Mono. Teoriya Prityazheniya [Moscow] 1961.
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Grodzovskii, G. L., Ivanov, Yu. N. and Tokarev, V. V.
ON THE MOVEMENT OF A BODY OF VARIABLE MASS WITH CONSTANT AND REDUCING POWER LOSS IN A GRAVITATIONAL FIELD.
Unpublished Russian manuscript O Dvizhenii Tela Peremennoi Massy s Postoyannoi i Ubyvayushchei Zatratoi Moshchnosti v Gravitatsionnom Pole. Chast 3, n.p., n.d., 66p.

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